

**The Effectiveness of Interventions and Social Support for Families Affected by
Addiction.**

Carly Louise Spicer

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THESIS OVERVIEW

This thesis consists of two volumes. Volume I is comprised of the research element while volume II is a collection of Clinical Practice Reports.

The focus of the first half of volume I is a literature review on the effectiveness of interventions for family members in their own right affected by a relatives substance misuse or gambling problem. The second half describes the Stress-Strain-Coping-Support Model and looks at the effect of coping and social support as mediating factors in the relationship between stress and strain.

Volume II is made up of four full length Clinical Practice Reports (CPR) and one abstract summary of a Clinical Practice presentation. They are as follows; CPR 1 Models of Psychology, CPR 2 Case Study, CPR 3 Service Evaluation CPR 4 Single Case Design, CPR 5 present a Case Study presentation.

Identifiable information has been removed to protect the confidentiality of the services and service users.

DEDICATION

To everyone who has shown me support and to those that didn't – you all helped me complete this work and I would like to dedicate this thesis to the following people;

To my Grandma Eileen for showing me how to 'be' and for never wavering in her confidence that I could reach this goal.

To my husband Gary for keeping me going against all the knockbacks, for keeping me fed and watered, for listening to my endless ramblings when I know it didn't always mean a thing, for looking after our little girl when I spent many a weekend locked in the dining room and for believing that I could achieve this even when I didn't believe in myself.

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CONTENTS

Volume I - The Effectiveness of Interventions and Social Support on Families Affected by Addiction.

Literature Review	1
Family members affected by a partner or relative's substance misuse or gambling addiction: A literature review investigating the effectiveness of interventions for families in their own right.	
Abstract	2
Introduction	3
Method	10
Search Strategy	10
Quality Evaluation	13
Results	15
Discussion	41
References	47
 Research Report	 57
Testing the effect of social support on the relationship between stress and symptoms in family members of people with addiction problems.	
Abstract	58
Introduction	59
Method	74
Design	74
Participants	74
Measures	76
Procedure	79
Data Analysis	81
Results	82
Discussion	90

References	100
Public Dissemination Document.	105
Appendices	
Appendix 1 Instructions for authors for nominated journal	112
Appendix 2	115
Integrated Model for understanding problem gambling and its impact on families	
Appendix 3 Evaluative framework for quantitative research.	116
Appendix 4 Colour coded matrix of quantitative research quality.	117
Appendix 5 Evaluative framework for qualitative research.	118
Appendix 6 Evaluative framework for qualitative research – results	120
Appendix 7 Gender of participants per study	121
Appendix 8 Letters of ethical approval	
Appendix 9 Information sheet for participants	122
Appendix 10 Consent forms	125
Appendix 11 Adverts.	126
Appendix 12 Example letter.	127
Appendix 13 SPSS Output	128
Appendix 14 Questionnaire Pack	132
Family Member Impact Scale	133
Symptom Rating Test	134
Coping Questionnaire	136
Alcohol, Drugs and the Family Social Support Scale	139

List of Tables

Literature Review

Table 1.

Terms used in the literature search for articles detailing the effectiveness of interventions for family members in their own right who are affected by a relative's addiction.

11

Table 2. Summary of articles.	16
-------------------------------	----

Research Report

Table 1. Summary of demographic information for AFMs.	84
---	----

Table 2.

Summary of demographic information for relatives with alcohol and/or drug use.	85
--	----

Table 3. Summary of test variables.	86
-------------------------------------	----

Table 4. Comparison of test variable means with other AFM data.	87
---	----

List of Figures

Literature Review

Figure 1: Schematic representing the search process undertaken.	12
---	----

Research Report

Figure 1. Description of Stress-Strain-Coping-Support model.	64
--	----

Figure 2.

Schematic representation of the Stress-Strain-Coping-Support model.	66
---	----

Figure 3.

Schematic diagram illustrating the specific pathways to be tested within the SSCS model.	69
--	----

Figure 4.

Mediation model with the statistical effects of the pathways within the SSCS model.	89
---	----

Volume II – Clinical Practice Reports.

CPR 1 – Models.

‘Sandra’ – Formulated from Cognitive Behavioural and Systemic Perspectives.

Abstract.	2
1.0 Referral Information.	3
2.0 Assessment Overview.	3
2.1 Clinical Interview.	3
2.2 Self-Report and Observation.	4
2.3 Psychometric Assessments.	4
3.0 History of the Current Problem.	6
3.1 Physical and Psychological Symptoms.	6
3.2 Practical and Social Consequences.	7
3.3 Previous Psychological Treatment.	7
3.4 Motivation.	8
4.0 Personal and Social History.	8
4.1 Childhood, Adolescence and Adulthood.	8
4.1.1 Childhood.	8
4.1.2 Adolescence.	9
4.1.3 Adulthood.	9
4.1.4 Genogram.	11
4.2 Relationships and Social Networks.	12
4.3 Physical Health.	12
4.4 Employment.	12
4.5 Substance Use.	12
4.6 Risk.	13
5.0 Cognitive Behavioural Formulation.	14
5.1 Longitudinal and Cross-Sectional Formulation.	16
5.2 Maintenance Cycles.	18
6.0 Systemic Formulation.	19
6.1 Summary of Approach.	20
6.2 Co-ordinated Management of Meaning.	20
6.3 Feedback Loops.	24
7.0 Reflections.	26
References.	28

CPR 2 – Case Study.

‘David’.

Abstract.	30
1.0 Referral and background information.	31
2.0 Assessment.	31
2.1 Psychometric assessment.	32
2.2 Memory assessment.	32
2.3 Self-report.	33
2.4 Clinical interview.	33
2.4.1 Presenting issue.	34
2.4.2 Precipitating factors.	35
2.4.3 Perpetuating factors.	36
2.4.4 Predisposing factors.	36
2.4.5 Protective factors.	37
3.0 Formulation.	38
3.1 Cognitive formulation.	38
3.2 Cross sectional formulations.	41
3.2.1 Maintenance cycles.	43
4.0 Intervention.	44
4.1 Genogram.	46
4.2 Diary and behavioural activation.	46
4.3 Faces and pictures diagrams.	48
4.3.1 Angry faces chart.	48
4.3.2 Strategies list.	48
4.3.3 Happy and calm diagram.	49
4.4 Relaxation and imagery.	49
4.5 Family work.	50
4.6 Maintenance work	50
5.0 Evaluation.	51
6.0 Reflections.	52
References.	54

CPR 3 – Service Evaluation

Evaluating a Service User Forum Provided by a Community Neurological Rehabilitation Team.

Abstract	57
1.0 Introduction	58
1.1 The National Picture.	58
1.2 Best Practice Examples Outside the NHS.	61
1.3 Local Current Initiatives.	64
1.4 Neurological Conditions.	64
1.5 The Existing Service User Forum.	65
1.6 Evaluation Aims.	66
2.0 Method	67
2.1 Design.	67
2.2 Participants.	68
2.3 Procedure.	68
2.4 Ethical Considerations.	71
3.0 Results	73
3.1 Initial Service User Focus Group Themes.	73
3.2 Initial Staff Interviews Themes.	74
3.3 Final Resulting Themes.	75
4.0 Discussion.	77
4.1 Recommendations.	79
5.0 Reflections.	81
References.	83

CPR 4 Single Case Design.

‘Liam’ - A systemic approach to formulation and intervention using a single case experimental design with a young offender under intensive fostering.

Abstract	86
1.0 Case Summary.	87
1.1 Index Offence and Historical Referral.	87
1.2 Current Referral and Presenting Difficulties.	87
1.3 Background Information.	88
1.3.1 Family History.	88

1.3.2	Early Experiences.	90
1.3.3	Education, Behaviour and relationships.	90
1.3.4	Circumstances leading to the index offence.	91
1.3.5	Mental Health	91
1.3.6	Risk Issues.	92
2.0	Assessment.	92
2.1	IFP Assessment.	92
2.2	Psychometric Assessment.	93
2.3	Cognitive Assessment.	94
2.4	IFP Initial Assessment/Consultation.	95
2.5	Meeting with Liam.	96
2.6	Meeting with Sarah.	99
2.7	Assessment Summary	99
3.0	Systemic Formulation.	100
3.1	Coordinated Management of Meaning (CMM).	102
3.2	Feedback Loops.	103
4.0	Intervention.	104
4.1	IFP Team and Carer Consultation.	105
4.2	Direct work with Liam.	105
4.2.1	Visual Timetable.	105
4.2.2	Motivational Interviewing Techniques.	107
4.2.3	Repetitive Problem Maintaining Behaviours.	108
5.0	Method	109
5.1	Design Rationale.	109
5.2	Data Collection.	111
6.0	Results.	112
6.1	Graphs	112
6.2	Statistical Analysis.	113
6.3	Psychometric Test Results.	113
7.0	Discussion.	116
7.1	Outcomes.	116
7.2	Limitations of the Design and Analysis.	117
8.0	Reflections.	118
	References.	119

CPR 5 Presentation
Case Study – ‘Lauren’

Abstract	122
----------	-----

Appendix	123
-----------------	------------

CPR 1

Appendix 1 Information and Consent Form.	123
--	-----

Appendix 2 Extended Description of Sandra’s Physical Health.	124
--	-----

CPR 2

Appendix 3 Genogram and key.	125
------------------------------	-----

Appendix 4 Progressive Supranuclear Palsy Information.	128
--	-----

Appendix 5 Example diary (including goals column).	129
--	-----

Appendix 6 Faces diagram – Sad and Angry.	130
---	-----

Appendix 7 Pictures diagram – Happy and Calm.	131
---	-----

Appendix 8 Strategies list – Final Version.	132
---	-----

CPR 3

Appendix 9 NRES Guidance.	133
---------------------------	-----

Appendix 10 Example Patient Consent Form.	135
---	-----

Appendix 11 Question Guide (Patient Focus Group).	136
---	-----

Appendix 12 Staff Consent Script.	138
-----------------------------------	-----

Appendix 13 Staff Semi Structured Interview.	139
--	-----

Appendix 14 Transcripts Extracts.	140
-----------------------------------	-----

CPR 4

Appendix 16 Intensive Fostering Programme Description.	142
--	-----

Appendix 17 Example IFP Timetable.	144
------------------------------------	-----

List of Tables

CPR 2

Table 1 HADS Results – Pre Intervention.	32
--	----

Table 2 RBMT – 3 Results.	33
Table 3 Treatment Journey.	45
Table 4 HADS Results – Post Intervention.	51

CPR 3

Table 1 Step By Step Method.	69
Table 2 Initial Themes – Focus Group.	73
Table 3 Staff Interview Themes.	74

CPR 4

Table 1 IFP Assessment Summary.	92
Table 2 Results of the RAASI.	93
Table 3 RAASI 2nd Administration November 2013.	94
Table 4 Results of the WISC Assessment.	95
Table 5 Consultation Exercises.	105
Table 6 Specific MI Exercises.	108
Table 7 Requirements of the multiple baseline and justification for the use of an AB design.	110
Table 8 Descriptive Statistics.	113
Table 9 RAASI Psychometric Test Results; December 2013.	114

List of Figures

CPR 1

i. Sandra's Family Genogram.	11
ii. Longitudinal and Problem Level Cognitive Behavioural Formulation.	17
iii. Maintenance Cycle: Depression.	18
iv. Co-ordinated Management of Meaning.	23
v. Systemic Feedback Loop: Son.	24
vi. Systemic Feedback Loop: Friends.	25

CPR 2

i. Cognitive Formulation.	39
ii. Maintenance Cycle – Low Mood.	42
iii. Maintenance Cycle – Anxiousness.	43

CPR 3

i. Ladder of Participation.	63
ii. Reoccurring Areas Analysis Grid.	71
iii. Final Thematic Map.	76

CPR 4

i. Liam's Family Genogram.	89
ii. Spider diagram completed by Liam during first appointment.	96
iii. My Motivation and confidence in avoiding arguing with others.	98
iv. Using the CMM in Formulation.	102
v. Circular relationship Feedback Loop: Caregivers.	103
vi. Liam's Visual Timetable.	107
vii. Graph Showing Liam's Programme Adherence Over Time.	112
viii. RAASI Graphical Profile	115

CHAPTER ONE – LITERATURE REVIEW

Family members affected by a relative's substance or gambling addiction: A literature review of the effectiveness of interventions for families in their own right.

Word Count 7,051

ABSTRACT

This literature review aimed to explore the effectiveness of interventions for family members affected by a relative's addiction problem, namely; substance misuse and gambling. PsycInfo, Ovid Medline, Web of Science and the Cochrane Reviews were systematically searched and a total of seventeen papers were included. Several core themes arose from the literature available; methodological quality, theoretical understanding, intervention characteristics, population differences, and outcome for participants. Randomised control trials were the most robust designs and suggested that effective interventions are associated with improvements in symptoms of stress, coping behaviours and positive changes in family functioning. Positive results have also been reported at follow up suggesting change is sustainable. Qualitative and mixed method designs were less robust and had identified limitations. There is a need for further work in this area with a specific focus on contemporary theoretical thinking, timing of interventions and involving the wider family systems. Family members benefit from interventions such as the '5 step' method and this can be applied in other countries with both drugs and alcohol problems. The inclusion of siblings is a developing area and support for families affected by gambling also needs further research and investigation. The inclusion of further RCTs alongside qualitative studies would further enrich our understanding of this area.

Key words: Family members, alcohol, drugs, gambling, addiction, interventions.

INTRODUCTION

Background: Addiction prevalence

The literature studied in this review focuses on addictive behaviour; specifically in relation to gambling, drugs, and alcohol. The estimated figures for adults who take part in at least one type of gambling (e.g. National Lottery, casinos, betting) in Britain was 590,000 in 2010 (National Centre for Social Research), similar to other European countries but lower than the USA and Australia. Kalischuk, Nowatski, Cardwell, Klein, and Solowoniuk (2006) explain that gambling is increasing globally and marketed vigorously. Pathological gambling (i.e. the urge to gamble continuously regardless of the consequences and harm to the individual and those around them) presents difficulties across several life areas, including; personal, vocational and family. The estimated total cost of gambling to society in the UK is £3.6 billion (GamCare, 2011). In relation to substance misuse it is estimated that around 230 million people worldwide used illegal drugs on one or more occasion in 2010 equating to 5% of the world's population (United Nations, 2012). The United Nations also report that 200,000 people die every year worldwide from drug abuse. Most recently, the World Health Organisation (2014) reported that 3.3 million deaths were attributable to the harmful use of alcohol in 2012, with Europe having the highest consumption per capita. Addiction is characterised by psychological difficulties that are causing harm, dysfunctional behaviour and family dysfunction.

Families affected by addiction

According to the UK Drug Policy Commission (Copello, Templeton, & Powell, 2009) at least 1.5 million adults in the UK are affected by a relative's drug use.

Subsequently families are suspected to experience harms amounting to £1.8 billion a year whilst supporting drug users; if this support was provided by the government instead it is estimated that it would cost around £750 million. Family members can experience psychological distress, mental and physical ill health, domestic violence, negative financial impacts (e.g. theft and paying debts), impact on employment through stress and having to care for dependents such as grandchildren (Adfam, 2012, Orford, J., Templeton, L., Velleman, R. & Copello, A., 2005). The impact of substances on families is usually several fold and there are multiple and complex problems as a result.

Early studies on gambling in the 1980's have shown similar results for family members; almost half of the partners of the gambler suffered from headaches, intestinal disorders and asthma-related problems (Lorenz and Yaffee, 1988). Psychological problems such as depression, anxiety and high levels of anger were also found to be common (Lorenz and Shuttlesworth, 1983; Lorenz and Yaffee, 1988). GamCare (2011) estimate that if every gambler has an impact on at least 4 other people, 1.8 million family members could be affected in the UK.

Policy and legislation for affected family members has been increasing in the last ten years given that early policies included very little reference to families, especially alcohol abuse. Historically the effects of addiction were focused solely on the individual and families were only considered in relation to a possible 'cause' of the addiction and not in relation to their own needs (Jurich, Polson, Jurich and Bates, 1985; Whalen, 1953). Policies and legislation did not recognise the effect on families until the late 2000s; Hidden Harm (Advisory Council on the Misuse of Drugs 2003, 2007), Drugs: protecting families and communities (Home Office, 2008) and Reducing drug and alcohol harms to communities and families (Home Office, 2010)

amongst others have had an influential effect on service delivery and national understanding. The World Health Organisation (2014) has recently highlighted the importance of health services to deliver prevention and treatment services for substance addiction, in particular increasing prevention, treatment and care for patients and their families, and supporting initiatives for screening and brief interventions. Publications such as the British Gambling Prevalence Survey (National Centre for Social Research, 2010), self-help websites (such as GamCare and Betfair) as well as specific research on the effect of gambling are also highlighting this area.

Understanding and supporting affected families

It is clear that families require support in managing the difficulties they are experiencing. Early studies such as Orford, Guthrie, Nicholls, Oppenheimer, Egert and Hensman (1975) and Sisson and Azrin (1986) began considering family members, although mostly in relation to helping the relative to get help for their addiction. Emerging concurrently with developments in research the longest running organisations for families were established by Gam Anon, Al-Anon and AdFam around 30 years ago. Gam Anon and Al-Anon in particular use a specific approach in line with the 12-Step philosophy followed by Alcoholics and Narcotics Anonymous. Due to their pledge to maintain anonymity very little research has been completed with attendees to groups of this kind. Historically gambling theories were also not concerned with the family and social context initially (Kalischuk et al., 2006) focusing more on problem orientated approaches. However, an increasing focus on the interaction between the individual, the gambling itself and their environment has developed. As a result the effect on families has received more attention and

subsequent interventions have been developed to support family members in their own right. In order to understand the most relevant and specific developments the following sections will introduce three recent literature reviews in this area. This will include the development of interventions for family members, the theories from which they have been derived and the justification for the current review.

Reviewing the Literature on Gambling.

Kalischuk, Nowatzki, Cardwell, Klein and Solowonick (2006) consider 15 articles which provide an exploration of the theoretical perspectives on gambling addiction, family members, interventions and a proposed model which synthesises their findings. Kalischuk et al. (2006) state that many explanations have been provided from psychological, sociological and holistic perspectives. It has been suggested that behavioural and social learning theories may explain the influence of modelling behaviour within families and therefore the positive shaping of views towards gambling within a family. From a sociological standpoint the broader social context is important and the role of social support and coping mechanisms was thought to have an effect on families experiencing stressors such as gambling addiction. Strong bonds to family, school, community and identification with societal values, norms and institutions are thought to decrease the risk of developing an addiction (Vakalahi, 2001). Through the presentation of the theory of reasoned action (TRA) and general systems theory (GST) this review suggests that the relationship between behaviours and attitudes, family acceptance of behaviour and behaviour maintenance through dysfunction are all interrelated and therefore one theory is not sufficient in explaining this complex area. They conclude by highlighting

the holistic view that complex and multidimensional aspects are influenced by the physical, mental, psychological, social, spiritual and economic factors of humans. The review also highlights that if family members are coping with stressors as explained by the stress-coping-support model (Krishnan and Orford, 2002) rather than being causative agents they are at risk of multiple difficulties and possibly gambling behaviour themselves. In order to support families the inclusion of a holistic approach and a focus on the relationship between stress and strain is reinforced.

The low numbers of effective interventions for family members affected by gambling is noted. Makarchuk, Hodgins, and Peden (2002) describe how the Community Reinforcement and Family Training (CRAFT) was adapted to support family members specifically and showed some significant positive effects such as helping self-esteem and increasing awareness. However, no group differences were found in relation to personal and relationship functioning, suggesting effects were not consistent in all areas. Kalischuk et al. (2006) present an integrated model for understanding problem gambling and its impact on families which is presented in Appendix 2. This model suggests that interventions must consider all co-existing elements of the systems within bio, psycho, social, spiritual, economic and environmental contexts and the individual/family/community/societal influences surrounding families where a gambling problem exists.

Substance Misuse Literature Reviews

The two most useful reviews to consider are Copello, Velleman and Templeton (2005) and Templeton, Velleman and Russell (2010); both concentrate on psychological interventions for family members. However, Copello et al. (2005)

includes a range of interventions on both drugs and alcohol and that fall in to three categories; (1) working with family members to encourage the entry and engagement of substance misusing relatives in to treatment, (2) joint involvement between family members and relatives in treatment and (3) interventions for the needs of family members in their own right. Templeton et al.'s review (2010) only includes families of alcohol users (drug use was also included as long as alcohol was the primary substance) and had a clear focus on outcomes for family members but not groups (1) and (2) highlighted above.

Copello et al. (2005) describe the array of theories applied to interventions for families; such as the cycle of change (Prochaska and Diclemente, 1986), cognitive behavioural approaches, Community Reinforcement and Family Training (Smith and Meyers 2004), unilateral family therapy (Thomas, Adams, Yoshioka and Ager, 1990), Alcohol-focused behavioural couples therapy (Epstein, E., McCrady, B., Epstein, E.E., & McCrady, B.S., 2002), family therapy (Liddle, 2004), and social behaviour and network therapy (Copello, Orford, Hodgson, Tober, and Barrett, 2002) have all been applied to mostly group family interventions with and without the substance misusing relative. When considering the final group (3) the emerging work of the UK Alcohol Drugs and the Family Research Group (2003) is described specifically in relation to the development of the Stress-Strain-Coping-Support Model (SSCS) and the '5 step' approach (please refer to Table 2 for variations of this). This approach significantly reduced signs of strain and enhanced coping mechanisms in participants. Some positive improvements were noted across most studies presented although research is fragmented. Copello et al. (2005) concluded that regardless of methodological weaknesses future research was required to complete trials more

akin to clinical settings, consider cost effectiveness, look at treatment process and utilise qualitative methods.

Templeton et al. (2010) completed the second review at a time when understanding of the damaging effect on families had increased, policies were developing and the need for focusing on family members in their own right was more clearly identified. Completed in 2006 and published in 2010; studies completed between 1979 and 2006 were reviewed (some studies were published later in 2009, but were completed prior to 2006). During the process of the review, Templeton et al. (2010) decided to adopt a much broader research methodology. There were several reasons for this; the field was felt to be too diverse and still developing so inclusion of studies that worked with the family member and alcohol misuser allowed a better understanding of the evolving literature. The studies they reviewed were divided into two categories; (1) studies involving family members but *not* the alcohol misuser and (2) studies involving family members *with* the alcohol misuser. In summary, after exclusions Templeton et al. (2010) considered 13 studies involving the alcohol misuser and 21 studies which did not. A specific quality framework was not applied during the review and as a result of the broader approach they were unable to focus specifically on family members in their own right. It was clear from conclusions that significant but mixed benefits to family members were being achieved; there was now a move towards bridging the gap between research findings and clinical practice. They concluded by recommending further reviews with a narrower focus, highlighting the need for a review of this nature.

The reviews considered above have demonstrated the developing nature of this area and it was felt pertinent to complete a further, more recent review focusing

on family members in their own right. As a result studies from the last 10 years with findings from gambling, alcohol and drug studies were included.

METHOD

Search strategy

An initial literature search was carried out in February 2014 utilising the OVID search engine to search PSYCHINFO and MEDLINE. WEB OF SCIENCE and the COCHRANE REVIEW LIBRARY were also searched via their own websites. The search terms employed are listed in Table 1 below however due to the technical differences in current databases it is not always appropriate to use the same search terms across all. This approach increases the risk of missing relevant papers therefore a combination of the search terms below and key word searching was employed; this provides a more thorough and detailed search of available literature.

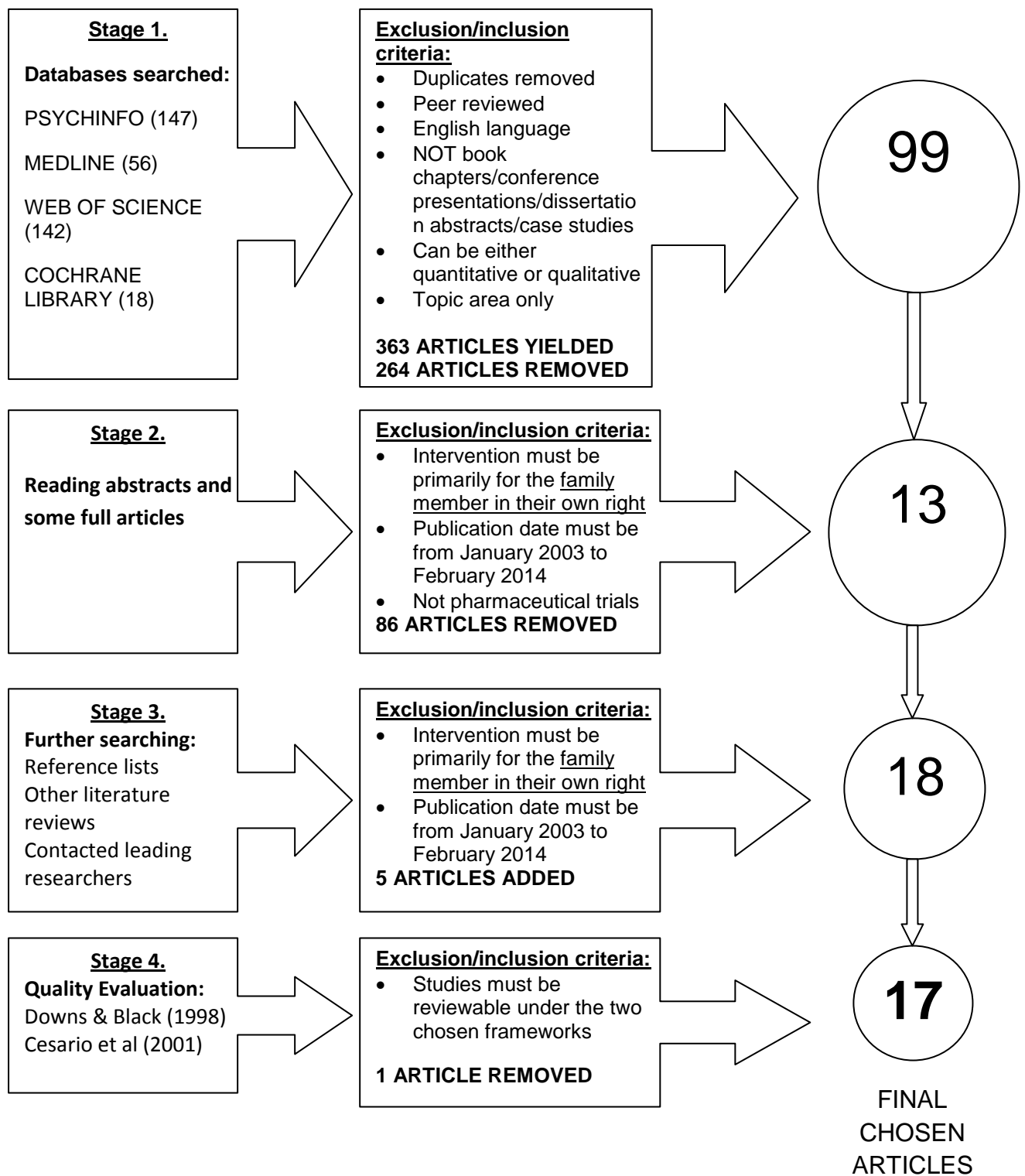
The initial search yielded 363 articles, subsequent exclusions and additions are detailed below in Figure 1 which provides an overview of the 4 stage process; this resulted in 17 articles to be reviewed. As Templeton, Velleman and Russell (2010) had completed a similar review in this area the most significant exclusion criterion was the date of publication; a time scale of the last 10 years was applied to the search strategy to capture changes within the last decade including studies published in the 7 years since the last review. At stage 4 two quality evaluation frameworks were employed (Downs and Black, 1998; and Cesario, Morin and Santa-Donato, 2001) to assess the quality of both quantitative and qualitative research; further information on this is supplied in the next section.

Table 1. Terms used in the literature search for articles detailing the effectiveness of interventions for family members in their own right who are affected by a relative's addiction.

Search Term	Variations
Family Member	'family member*' or 'relative*' or 'concerned other*' or 'affected family member' or 'relative care*' or 'family care*'
Interventions	'intervention*' or 'treatment*' or 'psychol* intervention*' or 'family intervention' or 'family group*' or 'group work' or 'brief intervention*' or 'psychosocial intervention*' or 'brief psychosocial intervention*' or 'randomised trial*' or 'randomized trial*'
Alcohol and drugs use	'alcohol*' or 'alcohol use*' or 'drug*' or 'drug use*' or 'substance use*' or 'substance misuse*' or 'alcohol addict*' or 'drug addict*' or 'alcohol problem*' or 'drug problem*'
Gambling	gambl* or 'gambling addiction'

* Search included both singular and plural terms e.g. family member or members.

Figure 1. Schematic representing the search process undertaken.



The application of a quality evaluation framework

Quantitative research

To evaluate the quality of the quantitative papers an evaluation checklist by Downs and Black, (1998) was implemented. A full list of the 26 questions applied by the Downs and Black checklist and a colour coded matrix reflecting the quality of the studies are included in Appendix 3 and 4. Each article is assessed by answering the questions and a colour is assigned to the article depending on the answer; green equals yes, amber is either 'unable to determine' or not applicable and red equals no. The questions prompt evaluation of how the study is reported, internal and external validity. The matrix summarises all the studies and allows a visual assessment of the quality across the literature as a whole. No articles were discarded from the review as a result of this process and the outcomes are described fully in the Results section.

Qualitative research

Three qualitative articles included in this review were evaluated using an adapted version of the Cesario, Morin and Santa-Donato (2001) framework developed initially for use assessing qualitative research in nursing environments. There is a full list of the questions applied to the literature in Appendix 5. The only adaptations made to the evaluation questions removed references to nursing practices and replaced them with psychological terms instead and these have been underlined in Appendix 5. A full breakdown of the quality ratings is provided in Appendix 6. On some occasions it was not clear whether the suggested steps were taken as they were not described in the data, it was assumed steps didn't occur and the quality rating was amended accordingly.

One article was discarded from the review as a result of the framework; it was not collected under a methodological framework and information presented was not subject to any external or internal validity checks.

RESULTS

Summary of literature reviewed

A summary of the papers reviewed can be found on the following pages in Table 2. Details relating to aims of the study, the quality rating, the sample, methodology, measures and outcomes are included. The articles have been numbered to aid clarity for the reader as some authors have been involved in more than one study. Across the studies the particular addiction they focused on was as follows; 4 on alcohol, 1 on drugs, 9 on both substances, 1 on alcohol and violence combined and 2 on gambling. There were 12 quantitative studies, 2 qualitative studies and 2 which adopted a mixed methodology. Table 2 is followed by the main findings from the literature review.

Table 2. Summary of articles.

	Author, Country of Origin, Quality Rating	Title & Summary/Aims	Sample & Recruitment	Methodology & Intervention	Specific Measures and/or Constructs Used	Outcomes & Limitations
1	<p>Bamberg, Toumbourou, & Marks, 2008, Australia.</p> <p>Overall Quality Review rating – 48%</p>	<p>Including the Siblings of Youth Substance Abusers in a Parent-Focused Intervention: A Pilot Test of the BEST Plus Programme.</p> <p>Whilst paying particular attention to the course and development of substance misuse this study aims to consider the effectiveness of including non drug-using siblings in the interventions for parents within families where youth substance misuse is present.</p>	<p>(n=49) 21 separate families, totalling 34 parents, 15 siblings.</p> <p>Criteria for inclusion were less stringent due to pilot study status.</p>	<p>Quantitative, within subjects pilot study.</p> <p>The BEST Plus Programme: 8 sessions across 4 professionally led, multifamily groups (groups completed over 12 months).</p> <p>Very clearly described sessions by session.</p>	<p>Independently completed professional observations by 2 clinicians and a separate research worker.</p> <p>Self-report surveys completed by parents and siblings pre and post intervention on activity disruptions (drug use behaviours), stress symptoms, family satisfaction (from Kansas Family Satisfaction Scale), satisfaction with child of concern, support from spouse/partner and support from siblings. The first 3 measures showed high consistency.</p>	<p>Suggest beneficial therapeutic impact in assisting families to respond to problems with substance misuse in young people.</p> <p>Parents self-report surveys reported significant reductions in activity disruption, stress symptoms and significant improvements in family relationships and satisfaction in relationships.</p> <p>Good retention rates 94%.</p> <p>Intervention appears to have good feasibility.</p> <p><i>Limitations:</i> No control group or follow up. Unable to determine causal links. Limited measures. Only 50% of potential siblings attended. Not clear how participants were recruited.</p>
2	<p>Copello, Templeton, Orford, Velleman, Patel, Moore, MacLeod & Godfrey, 2009, UK.</p> <p>Overall Quality Review rating – 79%</p>	<p>The relative efficacy of two levels of a primary care intervention for family members affected by the addiction problem of a close relative: a randomised trial.</p> <p>Participants took part in either a full (FI) or brief (BI) intervention (for use by healthcare professionals in primary care) based on the Stress-Strain-Coping-Support Model (SSCS) of addiction and the family. The study aimed to build on previous work, with a larger sample using a randomised experimental design. Hypothesis – that the FI would be more effective than the BI in terms of reduced stress and improved coping.</p> <p>Linked to articles 8 and 17.</p>	<p>(n=143) family members recruited from 136 practices.</p> <p>84-88.2% female across the two groups. Varied relationship to the using relative.</p> <p>Clear inclusion and exclusion criteria.</p>	<p>Prospective cluster randomised trial.</p> <p>FI = 5 face to face sessions alongside an intervention manual detailing the '5 step' model. Participants also received a self-help version of the manual.</p> <p>BI= 1 face to face session introducing the self-help manual with the participant taking the manual away with them to complete in their own time.</p>	<p>Symptom Rating Test – measures psychological symptoms of stress.</p> <p>Coping Questionnaire - measures behavioural coping.</p> <p>Both are validated, standardized and have good internal reliability.</p>	<p>No significant differences between the two trial arms.</p> <p>Significant reductions in symptoms of stress and coping behaviour at follow up across the whole group.</p> <p>Well constructed self help manuals delivered by a primary care professional may be as effective as several face to face sessions with the professional. 94% of all participants stated that they used the self-help manual.</p> <p>The BI is more cost effective and still a proven method compared to the FI based on the results from this study. However qualitatively participants preferred the FI = tension in cost savings and patient choice.</p> <p><i>Limitations:</i> Randomisation was conducted at practice level. Recruitment difficulties may have affected effect size. No longer term follow up (see article 17).</p>

	Author, Country of Origin, Quality Rating	Title & Summary/Aims	Sample & Recruitment	Methodology & Intervention	Specific Measures and/or Constructs Used	Outcomes & Limitations
3	Gregg & Toumbourou, 2003, Australia Overall Quality Review rating – QII 66%	Sibling peer support group for young people (13-18years) with a sibling using drugs: A pilot study. Aiming to provide support, information, promote harm minimisation and reduce the sense of isolation. To consider the appropriate support for siblings of substance using young people supported by the recognised need for support to this group through the current literature.	(n=7) 6 females 1 male. Diverse strategies employed to ensure that a wide range of families contacted but only word of mouth was successful. Assessment interviews to create safe and mutually supportive environment.	<u>QUALITATIVE STUDY</u> Facilitator led sibling group developed from evidence from previous groups. No control groups or comparisons. 2 groups running from 6-8 weeks following the same format. 6 themes covered; stress management, support, viewing drugs in perspective, the Cycle of Change, effects of drugs and conflict resolution and communication skills. Made up of icebreakers, psychoeducation, activities, session content and adaptations guided by group's wishes. Some social activities as a group. No specific qualitative analysis used.	Pre and post group informant interviews . Interviews with the group facilitator. Brief surveys (family details, substance use, relationships with others, satisfaction with aspects of life). Coping skills data (for delayed statistical analysis). Post group focus group , telephone interviews with participants and some parents.	Goals of sessions were met. Participants reported feeling better informed, more supported, and having a reduced sense of isolation. Parents of participants reported that they demonstrated improved communication. Community level indicators showed enthusiastic collaboration from organisations such as schools and police. Some young people also completed leadership training. <i>Limitations:</i> Qualitative analysis not clear. Evaluation used mixed methods. Recruitment was a challenge so unlikely to be representative of the population. Was not inclusive of older siblings or wider family members. No follow up (requested by groups as a future requirement).
4	Hansson, Zetterlind, Aberg-Orbeck & Berglund, 2004, Sweden. Overall Quality Review rating – 79%	Two-year outcome of coping skills training, group support and information for spouses of alcoholics To complete an evaluation of 3 different programmes as listed above aimed at spouses aged 18-60 (who were living with alcoholic partner with an existing alcohol problem) and to ascertain the methods/interventions that are helpful to this population in their own right. There was also a particular focus on the stability of improvements after an additional year. As previous studies had shown improvements at 12 month follow up, but the single session intervention had been less effective at maintaining decreases in mental health symptoms.	(n=39) 36 women 3 men Range = 23-60 years old Clear inclusion criteria, recruited via clinical and public information sources.	Randomised Controlled Trial – all participants were randomly allocated to one of the following programmes; (i) A single standard 60 min information session. (ii) Individual coping skills training; the information session and 4 monthly 90min sessions. (iii) Group support; the information session and 12 90min group sessions (fortnightly over 6 months) using a system theoretical approach with elements of CBT.	Face to face interview. 4 further valid self-report measures were as follows; Coping Behaviour Scale. Symptom Checklist 90 (SCL-90) Hardship Scale Alcohol Use Disorders Identification Tool (AUDIT) Used to measure changes in coping, stress, hardship and alcohol use at the following intervals; -Baseline. -12 month follow up. -24 month follow up.	Significant improvements noted at 12 and 24 months follow ups in; Coping behaviour, psychiatric symptoms, and hardship. Results were stable from 12 to 24 months. Participants with increased SCL-90 scores in the treatment groups showed more improvement in psychiatric symptoms than the information session only group. The divorce frequency after 24 months was higher in comparison to a similar study elsewhere for participants who scored above a comparable mean at initial measurement. Good retention at follow up, only one dropped out (coping skills group). <i>Limitations:</i> A larger sample would have increased the power. Utilising stratification or quota sampling instead of pure randomisation would have been beneficial.

	Author, Country of Origin, Quality Rating	Title & Summary/Aims	Sample & Recruitment	Methodology & Intervention	Specific Measures and/or Constructs Used	Outcomes & Limitations
5	Hansson, Rundberg, Zetterlind, Johnsoon & Berglund, 2006, Sweden. Overall Quality Review rating – 84%	<p>An intervention programme for university students who have parents with alcohol problems.</p> <p>It was hypothesised that the alcohol intervention would affect the participants own alcohol use. That the coping intervention would affect dysfunctional coping behaviours and the combination programme would affect both.</p>	<p>(n=82)</p> <p>56 women 22 men Average age = 25yrs Participants had grown up in an environment with at least one parent with an alcohol problem.</p> <p>Recruitment – written material sent out by various methods at Lund University, Sweden.</p>	<p>Randomised Controlled Trial.</p> <p>1hour baseline assessment followed by stratified random allocation to one of the following programmes; (a) Alcohol intervention programme. (b) Coping intervention programme. (c) Combination programme.</p> <p>All included two 2 hour sessions every 4 weeks.</p>	<p>Face to face interview (DSM-IV criteria used) 6 further valid self- report measures used; -Alcohol Use Disorders Identification Test (AUDIT) -Short Index of Problems (SIP) -Estimated Blood Alcohol Concentration -Coping with parents' abuse questionnaire. -Symptom Checklist 90 (SCL-90) -The Interview Scale for Social Interaction (ISSI). Follow up 12 and 24 months. Participants feedback obtained.</p>	<p>95% completed the 12 month follow up.</p> <p>Significant improvements in drinking patterns observed in groups (a) and (c) (completed the alcohol intervention).</p> <p>No differences across groups (a) and (b) in ability to cope with parents' alcohol problems, changes in own mental health or social interaction capacity.</p> <p>Important to include an alcohol intervention element when working with this population.</p> <p><i>Limitations:</i> Only one therapist used for all 3 programmes although programmes were manualised so there was an element of control over delivery of materials.</p> <p>Small sample.</p> <p>Generalisation of findings is limited to treatment seekers.</p>
6	Hong & Yang, 2013, Korea. Overall Quality Review rating – 60%	<p>Effects of a family education program for families of <u>pathological gamblers</u>.</p> <p>Intervention based on the Community Reinforcement and Family Training (CRAFT) compared with the 12 step Gam-Anon programme.</p>	<p>(n= 44)</p> <p>42 females/2 males.</p> <p>68.2% spouses 31.8% parents.</p> <p>Recruited from 2 sites; one support centre and 5 Gam-Anon groups.</p>	<p>Quasi-experimental, non-equivalent control group pretest-posttest design.</p> <p>Between subjects.</p> <p>Experimental group = 6 weekly 2 hour long CRAFT programme.</p> <p>Control group = 12 step Gam-Anon</p>	<p>All measures completed before and after intervention;</p> <p>-Becks Depression Inventory (BDI-II).</p> <p>-Interpersonal Communication Inventory.</p> <p>-Trait Anger.</p> <p>-State Anger.</p> <p>-Anger expression.</p> <p>-Self Esteem.</p>	<p>The experimental group showed significant decreases in depression and state anger.</p> <p>No significant difference were observed between groups for; level of interpersonal communication, trait anger, mode of anger expression and self esteem.</p> <p><i>Limitations;</i> No follow up described.</p> <p>Participants were not randomised to their intervention.</p>

	Author, Country of Origin, Quality Rating	Title & Summary/Aims	Sample & Recruitment	Methodology & Intervention	Specific Measures and/or Constructs Used	Outcomes & Limitations
7	Howells & Orford, 2006, UK. Overall Quality Review rating – 56%	<p>Coping with a problem drinker: A therapeutic intervention for the partners of problem drinkers, in their own right.</p> <p>A focus on the development and preliminary evaluation of the above. With the primary aim to be for partners in their own right and not engagement of the problem drinker in to treatment.</p> <p>Aims - 1. Were changes maintained and 2. Could change be attributed to the intervention</p>	<p>Case studies: (n=15) 100% female</p> <p>Main intervention: (n=50) 94% women. Ave age 41.6years</p>	<p>Mixed methodology.</p> <p>Initial case study approach used to test and refine guidelines and develop a protocol which could be used in the main study. This was alongside bespoke sessions for the women getting support.</p> <p>Main study pre/post evaluation of an intervention consisting of between 1 – 12 sessions, with the mean number attended being 4. A delayed treatment control group was later established.</p>	<p>Main: Symptom Rating Test (SRT).</p> <p>Additional: Short Coping Questionnaire (SCQ).</p> <p>-Self-Esteem (SE)&Independence (IND)Questionnaire.</p> <p>-Drinking Related Behaviour (DRB).</p> <p>-Outcome for Problem Drinker (OPD).</p> <p>Measurements of whom the help was sought for and the presence of violence in the relationship was also recorded.</p> <p>Follow up at 3, 6 (& comparison to a small waiting list)& 12 months.</p>	<p>Significant changes across;</p> <p>-SRT and SCQ (sacrificing) from initial to 3 and then 6 months.</p> <p>-SE and IND from initial to 3 months.</p> <p>-SCQ (engaged) from 3 to 6 months.</p> <p>Compared to waiting list changes occurred after the start and some maintained at 12 months.</p> <p><i>Limitations:</i> Only partial 12 month follow up as only 37 participants completed all 3 assessment stages. High drop out. Small sample.</p> <p>Over half the sample (26/50) said they were seeking help for the drinker in the relationship only and not themselves, possible confounding variable.</p>
8	Orford, Templeton, Patel, Copello & Velleman, 2007, UK. Overall Quality Review rating – QIII 97%	<p>Qualitative study of a controlled family intervention trial in primary care: The views of family members.</p> <p>The study aims to understand the strengths and limitations of an intervention from the participants' perspectives through qualitative means; this understanding better how it might aid positive change and why it is or isn't successful in doing so.</p> <p>Linked to articles 2 and 17.</p>	<p>(n=143)</p> <p>Patients from NHS primary care services.</p> <p>84-88.2% female across the two groups.</p>	<p>QUALITATIVE STUDY</p> <p>Semi-structured interviews 12 weeks after completing a full or brief '5 step' intervention;</p> <ol style="list-style-type: none"> 1. Listening non-judgementally. 2. Providing information. 3. Counselling ways of coping. 4. Discussing increased social support. 5. Considering further options for help and support. <p>Average length= 75 minutes.</p>	<p>Analysis of interviews using;</p> <p>Framework analysis.</p> <p>Grounded theory analysis.</p>	<p>Strong support for interventions that included face to face discussions with a primary care professional. Those from the full intervention listed benefits of talking to a professional.</p> <p>Transformations in coping regardless of intervention type. Increased consciousness of issues within family and effects. Some unable to describe changes.</p> <p><i>Limitations:</i> Interventions needed strengthening for those with longer standing problems or have had similar material in the past. Opinion that it would not effect change for the substance user.</p>

	Author, Country of Origin, Quality Rating	Title & Summary/Aims	Sample & Recruitment	Methodology & Intervention	Specific Measures and/or Constructs Used	Outcomes & Limitations
9	Rey, Aguilar, Perez, Juarez, & Tiburcio, 2011, Mexico. Overall Quality Review rating – 52%	Effects of intervention on relatives of alcohol consumers in an indigenous community in Mexico. Alcohol dependence is higher in indigenous communities compared to urban areas. Comparison between a group of affected family members who received the intervention with a group who are experiencing similar problems within their family but refused to participate in the programme.. Preceded by Sainz and Rey, 2003 (see article 12).	(n=60) 100% female, 18-65 years old. <u>It is not clear whether the sample of 60 made up just the intervention group or included the comparison group too.</u>	Quasi experimental pre and post intervention evaluation. Brief intervention ('5 step's) based on the Stress-Strain-Health Model. 4-6 sessions, over 6-8 weeks. Both the intervention group and the comparison group were then contacted again at 3 months post group.	3 valid questionnaires were implemented; Coping Questionnaire (CQ). Symptom Scale (SRT). Centre for Epidemiological Studies Depression Scale (CES-D).	Significant reductions in physical and psychological symptoms and depression. Symptoms increased in the comparison group. Coping styles – Intervention group; committed and tolerant styles reduced. Independent styles maintained. Both change = a less stressful response. Comparison group - committed and tolerant styles maintained. Significant reduction in independent behaviour. <i>Limitations:</i> No random allocation of equivalent groups. Sample size of intervention group and control unclear.
10	Rychtarik & McGillicuddy, 2005, USA. Overall Quality Review rating – 85%	Coping Skills Training (CST) and 12-Step Facilitation (TSF) for Women Whose Partner Has Alcoholism: Effects on Depression, the Partner's Drinking, and Partner Physical Violence. This work focused on comparing the immediate and long term efficacy of the CST with the TSF in improving the functioning of the participants taking part.	(n=171) 100% female Average age 42.6 years old. Had to be living with partner, married/cohabited for at least a year, free of substance misuse, inactive in any similar treatment group in the last 3 months. Participants were from violent and nonviolent relationships.	Participants were allocated to 3 treatment groups; CST, TSF or delayed treatment (DTC). Allocation was completed by randomly assigning equal numbers of cohorts of 4-6 eligible participants at a time. Participants then had 8 weeks of treatment. In total 36 cohorts were randomised. Telephone follow up assessments at 3 and 9 months and face to face interviews at 6 and 12 months. Interviewers were blind to the treatment assignment.	-Alcohol Use Disorders Identification Test (AUDIT) -Drug Abuse Screening Test (DAST). -Beck Depression Inventory (BDI-IA) -Meaning seeking measures were; A composite index of the 20 item Purpose in Life Test (PIL) and the Seeking of Noetic Goals Scale (SONG). -Relationship cohesion- subscale of the Dyadic Adjustment Scale. (DAS). -Interpersonal Dependency Inventory (IDI) -Feelings About Your Schedules Treatment Scale -Changes in partner's drinking and functioning. -A violence subscale was also implemented.	Reduced depression: No differences between CST and TSF but reductions compared to DTC. This was maintained at 12 months with no differences between groups. -Partner drinking: significantly decreased in CST and TSF. -Partner violence decreased in the CST condition. -It is suggested that CST may be particularly useful for women experiencing physical violence as well as alcohol problems from their partner. -Increased health benefits for both partners. 73% of all post treatment and follow up assessments were completed. <i>Limitations:</i> Randomisation was not with individual people so may have reduced statistical power. Findings from TSF cannot be extended to Al-anon attendance only. Findings do not extend to same-sex partners.

	Author, Country of Origin, Quality Rating	Title & Summary/Aims	Sample & Recruitment	Methodology & Intervention	Specific Measures and/or Constructs Used	Outcomes & Limitations
11	Rychtarik & McGillicuddy, 2006, USA. Overall Quality Review rating – 81%	Preliminary Evaluation of a Coping Skills Training Program for Those with a <u>Pathological-Gambling Partner.</u> The CST is based on the stress and coping model and compared against a delayed treatment control (DTC) condition.	(n=23) 83% women Average age of 43.17(SD = 9.73. CST: n=12 DTC: n=11 8 eligibility criteria including; participant's partner had to be a pathological gambler, but not in treatment, married or cohabiting,	Randomised pilot investigation. Pre and post test assessments completed. CST - 10 sessions every week of a manualised treatment based on the stress and coping perspective aimed at increasing their functioning and understanding. DTC – the comparison group waited 10 weeks while the CST was completed and were then offered the programme as above.	-Gambler Situation Inventory (GSI). -Coping Questionnaire (CQ) short form. -Beck Depression Inventory (BDI-II). -Beck Anxiety Inventory (BAI). -Anger Expression Index (part of the State Trait Anger Expression, STAXI-2). -Partner Gambling.	CST showed a large improvement in coping skilfulness which appeared to mediate a corresponding significant reduction in depression & anxiety. Partner gambling reduced in CST & DTC but there was no difference between groups. Similarly this was the same with partner help-seeking. <i>Limitations:</i> Pilot study. Small sample. No comparison with a different treatment model.
12	Sainz & Rey, 2003, Mexico Overall Quality Review rating – 44%	A pilot study evaluation of a brief intervention model for families of drug and alcohol users. Intervention based on the stress-coping health approach to investigate the Engaged/Tolerant/Withdrawal coping styles. Pilot study.	(n=28) Recruited from 3 sites in Southern Mexico. 68% women 32% men Average age 37.5 years old.	Pre and post-test design. Within subjects. Intervention included; 1) Listen and explore impact upon families. 2) Information giving. 3) Coping mechanisms. 4) Exploring support received. 5) To refer where needed.	Pre intervention and 3 months afterwards. Coping Questionnaire (CQ). Symptom Scale (SRT). Satisfaction rating questionnaire also collected at follow up.	The authors state this model is a feasible approach for this client group. Tolerant and engaged coping reduced and the use of withdrawal strategies increased. Physical and psychological symptoms decreased. Satisfaction rating stated intervention was useful, participants recorded life changes including within their relationship with their relative. Follow up suggested that trying new responses elicited change and therefore getting help had been useful. <i>Limitations:</i> Simple design. Limited follow up information (n-11). No comparison of overall scores.

	Author, Country of Origin, Quality Rating	Title & Summary/Aims	Sample & Recruitment	Methodology & Intervention	Specific Measures and/or Constructs Used	Outcomes & Limitations
13	Templeton, Zohhadi & Velleman, 2007, UK Overall Quality Review rating – QIII 87%	<p>Working with Family Members in SDAS: Findings from a Feasibility Study.</p> <p>Aim was to assess the feasibility of the development and implementation of a brief intervention for affected family members of substance users having treatment within a specialised setting.</p>	<p>(Staff; n=13. Family members; n=20)</p> <p>Staff came from 7 teams across one MHTeam.</p> <p>80% of family members were female.</p>	<p><u>QUALITATIVE AND QUANTITATIVE STUDY</u></p> <p>Pre and post mixed methods design used in combination.</p> <p>Intervention: an integration of previous work resulting in a 100 page manual;</p> <ol style="list-style-type: none"> 1) Introduction. 2) Overview of Intervention. 3) The '5 step's. 4) Supplementary information (on; case studies, stresses and strains, alcohol and drugs, further reading and contact details nationally and locally). 	<p>Family members:</p> <p>-Impact Questionnaire.</p> <p>-Coping Questionnaire.</p> <p>-Symptom Rating Test.</p> <p>Baseline and 12 weeks follow up.</p> <p>Staff: Quantitative measure of therapeutic commitment (prior to training and 10 months later). Focus group at follow or phone call.</p> <p>Grounded Theory and Interpretative Phenomenological Analysis used to assess the qualitative data.</p>	<p>It was feasible for:</p> <ul style="list-style-type: none"> - The intervention to be adapted to a specialist setting. -Staff to be recruited and trained to deliver it. -Staff to recruit and work with families. -All involved to see the work as useful and positive. <p>Organisational and commissioning issues are likely to prevent the systematic delivery of the intervention as there is a lack of recognition that a more holistic approach involved the family context is beneficial to the treatment of addictions.</p> <p><i>Limitations;</i> Follow up data was only collected for 75% of the sample.</p> <p>More information on qualitative data analysis would have been useful.</p>
14	Templeton, 2009, UK. Overall Quality Review rating – 46%	<p>Use of a structured brief intervention in a group setting for family members living with substance misuse.</p> <p>Use of an intervention for family members in their own right within a voluntary service. The aim was to integrate it within a weekly themed group programme to consider its effectiveness in this setting.</p>	<p>(n=12)</p> <p>67% women 33% men</p> <p>Participants attended an existing carer group.</p>	<p>Pre and post design using quantitative data for assessment. Within-subjects.</p> <p>The '5 step' model was integrated with an existing carer group format and included;</p> <p>Introducing the intervention and group guidelines. Then;</p> <ol style="list-style-type: none"> 1) Listen and explore family story. 2) Guidance and advice. 3) Explore coping (including e.g. transactional analysis, anger management) 4) Explore support (including self-care and relaxation techniques) 5) Look at further needs and celebration of achievements. <p>Self-help version of manual available.</p>	<p>Data was collected at the start and end of the group.</p> <p>Primary measures;</p> <p>-Coping Questionnaire.</p> <p>-Symptom Rating Test.</p> <p>Secondary measures;</p> <p>-Impact Questionnaire.</p> <p>-Hopefulness for the future.</p>	<p>The intervention was successfully used in the service and is a feasible addition to the group programme.</p> <p>Analysis was commensurate with the view that higher levels of impact are associated with higher levels of symptoms, in turn this is associated with higher tolerant coping and lower levels of hope.</p> <p>Significant changes occurred across several areas;</p> <p><i>Limitations;</i> Size of dataset did not allow further analysis.</p> <p>Results must be treated with caution as follow ups were not completed at the same stages due to the "unpredictable nature of routine clinical practice".</p> <p>No comparison group.</p>

	Author, Country of Origin, Quality Rating	Title & Summary/Aims	Sample & Recruitment	Methodology & Intervention	Specific Measures and/or Constructs Used	Outcomes & Limitations
15	Toumbourou & Bamberg, 2008, Australia. Overall Quality Review rating – 58%	<p>Family recovery from youth substance use related problems: A pilot study of the BEST Plus program.</p> <p>To investigate the effects on family functioning of a pilot family intervention model for parents experiencing stress in coping with problems as a result of substance misuse. Based on successfully evidenced earlier versions of BEST.</p> <p>Hypotheses focused on forecasted significant effects in parent change, family change and youth recovery.</p>	<p>(n=34)</p> <p>Parents came from a total of 21 families.</p> <p>62% female 32% male</p> <p>Recruited from those approaching existing agencies. Their relative had to be a child between 12 and 25 years old and dependent on them for accommodation and financial support.</p>	<p>Pre and post intervention self-report surveys. Non-experimental correlational design.</p> <p>The BEST Plus programme ran was an 8 week group for 2 hours a session. 4 groups ran over the course of 12 months.</p> <p>Sessions examples were; discussing problems with others, normative aspects to behaviour, self-care, "right to happiness", alternative strategies, sibling participation, acknowledging trauma, new family strategies to increase cohesion, implementing changes.</p>	<p>The following information was recorded;</p> <ul style="list-style-type: none"> -Emotional disturbance. -Activity disruptions. -Stress symptoms. -Cohesive family behaviour. -Youth recovery action. -Attendance of siblings was also recorded. 	<p>94% retention rate.</p> <p>Significant associations between targets for parental change and post intervention improvements in stress symptoms and cohesive family behaviours in hypotheses 1 and 2:</p> <ul style="list-style-type: none"> -Lower post programme parent stress symptoms associated with progress on the course in reducing the emotional impact of youth behaviour. -In programme reductions in stress and including sibling attendance made small but significant contributions to improvements in family cohesion. <p><i>Limitations;</i> There was not enough adequate data to test the hypothesis around youth recovery action. Low statistical power. Treatment seeking population only recruited/small sample. Only preliminary indications of causal relationships</p>
16	Velleman, Arcidiacono, Procentese, Copello & Sarnacchiaro, 2008, Italy. Overall Quality Review rating – 75%	<p>A 5-Step intervention to help family members in Italy who live with substance misusers.</p> <p>Feasibility study to test whether an existing successful intervention could delivered in Italy.</p>	<p>Family members(FMs); n=52. 90% female 10% male FMs had to be living with or in close daily contact with relative with problem.</p> <p>Professionals involved; n=41. 18 GPs and 23 community addiction staff. 56% recruited and completed an intervention with at least one family member.</p>	<p>Before and after analysis of the intervention and assessment of feasibility by considering whether it's possible to translate, recruit staff, train, recruit families, implement the programme, look at adherence, impact and evaluation.</p> <p>Intervention was as follows; 1) Listen, reassure, explore concerns. 2) Provide relevant information. 3) Explore coping. 4) Explore social support. 5) Suggest further options for help and support and refer on if appropriate.</p>	<p>The measures were completed at the beginning and 3 months later when it had finished;</p> <ul style="list-style-type: none"> -Symptom rating test (SRT). -Coping Questionnaire (CQ). 	<p>Materials were applicable and it was felt feasible to deliver in an Italian context. Staff across different health organisations were successfully recruited. Major and significant changes were made across coping strategies, and physical and psychological symptoms. Engaged and withdrawal coping also changed in the expected direction but was not significant. 79% of professionals stated they would be using the intervention again and rated it as effective and helpful.</p> <p><i>Limitations;</i> Less focus on intervention effectiveness and more on feasibility of taking intervention to Italy. Males underrepresented in family members group. Only 50% of FMs had all 5 sessions of the intervention.</p>

	Author, Country of Origin, Quality Rating	Title & Summary/Aims	Sample & Recruitment	Methodology & Intervention	Specific Measures and/or Constructs Used	Outcomes & Limitations
17	<p>Velleman, Orford, Templeton, Copello, Patel, Moore, Macleod, & Godfrey, 2011, UK.</p> <p>Overall Quality Review rating – 75%</p>	<p>12-month follow-up after brief interventions in primary care for family members affected by the substance misuse problem of a close relative.</p> <p>Aim was to follow up the interventions completed in the Copello et al. 2009 study (article 2) to investigate sustainability of treatment effects and enhance the results and clinical significance of findings.</p> <p>Linked to articles 2 and 8.</p>	<p>(n=90) The sample was 63% of the original study. n=32 from the full intervention arm and n=58 from the brief intervention arm.</p> <p>Participants were contacted by post and telephone on 2-3 occasions and in conjunction with the agencies from which they had been originally contacted.</p>	<p>Follow up questionnaire booklets were sent out to previous participants just before the 12 months deadline post intervention.</p> <p>Several stages of analysis were completed for example: -Attrition differences. -Full versus brief intervention Comparisons. -Sustainability of improvements. -Differential effects. -Attribution of change in relatives to interventions.</p>	<p>Measures administered were;</p> <p>-Family member Impact Scale.</p> <p>-Symptom rating test (SRT).</p> <p>-Coping Questionnaire (CQ).</p>	<p>Initial improvements at 12 weeks were maintained at 12 months and further improved (unrelated to demographic variables).</p> <p>Still no significant differences observed between family members regardless of type of intervention delivered (brief or full).</p> <p>69% thought that some of the changes in their relative was due to the intervention.</p> <p>Scores on the impact measure reduced gradually over time regardless of intervention.</p> <p>Some improvements in relative misusing behaviour noted.</p> <p>Scores are still high in general compared to 'problem-free' individuals. Highlights the need for continued work. Detailed discussion explores meaning of results thoroughly.</p> <p><i>Limitations:</i> 37% were of original sample were not followed up.</p>

Findings derived from the literature

The following sections describe the findings from the articles above. Within this section there will be a description of the main findings using 5 broadly defined categories as follows; (i) methodological quality, (ii) theoretical understanding, (iii) intervention characteristics, (iv) population differences and (v) outcomes for participants. The categories are not exclusive and overlap was observed on many occasions. Each section will explore a particular question in relation to the topic area, pertinent literature and conclusions. This will be followed by a general discussion, conclusions considering the overall findings reviewed, and implications for clinical practice.

(i) Methodological quality

Qualitative, quantitative and mixed research methodologies have been applied across the literature. A framework to assess methodological quality is important to aid understanding of how research designs may affect outcomes and subsequent generalisability of results (Downs and Black, 1998).

Evaluating Quantitative Methods

The Downs and Black (1998) quality framework was applied to 14 studies in total. The summary of results is in Appendix 4. Each article has been given an overall quality percentage based on the previously described scoring system. The methodology is also indicated underneath the article numbers. A number of observations can be made from completing the process and studying the completed matrix. As a whole studies scored between 44% – 85% overall quality and in general they all described the hypothesis, aims, outcomes to be measured, characteristics of

patients and interventions well. Randomised trials and randomised control trials (articles 10, 11, 4, 2, 5 and 17) scored most highly for overall quality ranging from 75% – 85%; this is largely due to the randomised element of those studies but also good internal validity such as compliance with interventions and follow ups. The remaining studies (i.e. where participants were not subject to randomisation) scored between 44% – 60% (articles 12, 14, 1, 15, 6, 7 and 9) This excludes article 16, whose scores were based on data from article 2 as it was a follow up study. In particular items relating to external validity, such as population representation and reporting of findings, were not always adequately included. It was evident from the application of the framework that between-subjects designs scored better on the whole than within-subjects designs. The highest scoring study achieved 85% (article 10, Rychtarik & McGillicuddy, 2005), this also had the highest sample (n=171), had three treatment conditions, and used several measures. The lowest scoring study achieved 44% (article 12, Sainz and Rey, 2003), this was a pilot study completed in Mexico with a sample of n = 28 and n = 11 at follow up. Both articles 12 and 9 (52% quality rating) described studies completed in Mexico, there is a possibility that different expectations in reporting due to country of origin may have led to the required information not being included and therefore unable to be scored. Having applied a framework such as this it is fair to assume that these studies can contribute positively to the discussion of the further findings below and references will be made to varied methodological quality throughout. However, it is clear that more robust and reliable research would enable a clearer picture of intervention effectiveness.

Evaluating Qualitative Methods

Appendix 5 shows the use of the Cesario et al. (2001) framework applied to the three qualitative studies included in this literature review; Gregg and Toumbourou (2003, article 3), Orford et al. (2007, article 8), and Templeton et al. (2007, article 13). Templeton et al. (2007) contained both quantitative and qualitative data however the larger of which was qualitative and so it was felt appropriate to apply the Cesario et al. (2001) framework instead of the quantitative framework.

Ratings were calculated by attributing a score to each item and calculating a percentage in line with the scoring scale. Unlike the Downs and Black framework there was no option for 'unable to determine' so in some cases information may not have been included in the write up. Applying a framework like this encourages a more in depth analysis of how studies have been executed and shows the importance of adhering to standards and ensuring preciseness in non-experimental designs. Gregg and Toumbourou scored a quality rating 2 out of 3, whilst Orford et al. and Templeton et al. both scored 3. This was largely due to limited methodological congruence reported by Gregg and Toumbourou as they scored highly across the other areas. All three studies scored almost maximum ratings within the heuristic relevance category showing the importance of this research in expanding upon the psychological knowledge of families affected by addiction. Having applied a framework such as this it is fair to assume that these studies can contribute positively to the discussion of the further findings below and references will be made to all methodological quality throughout.

(ii) Theoretical understanding

Given the wide and varied range of theories proposed both historically and currently about the causes of strain and the resulting effects on families it is pertinent to discuss theoretical connectedness. The theoretical standpoint of the researchers will have informed and guided both the content of the sessions delivered and in some cases the specific skills and treatment goals; this section will consider what the links between the theory and the results are. Theoretical underpinnings were described in varying intensity, quality and clarity as identified by the evaluative frameworks.

Family systems approaches in substance misuse.

Gregg and Toumbourou (2003), Bamberg et al. (2008) and Toumbourou and Bamberg (2008) have pioneered work with families in Melbourne, Australia. Toumbourou and colleagues report a range of services using the family systems approach (Stanton, Todd and Associates 1982) in treating drug addiction and associated problematic behaviours. As a result the inclusion of all family members and increased awareness of the wider systems around the problem is integral to the services and intervention these papers represent. Although all three papers were pilot studies and therefore did not have particularly high methodological quality (scoring QII - 66%, 48% and 58% as indicated in Table 2) the results suggested support for the use of the family systems approach, particularly as it can include all immediate family members (i.e. parents and siblings). Significant reductions in stress symptoms and improvements in family

satisfaction were reported by Bamberg et al. (2008); siblings reported a reduced sense of isolation in the Gregg and Toumbourou study; and Toumbourou and Bamberg found significant associations between targets for parental change and post intervention improvements in stress symptoms and family cohesion. Small sample sizes, lack of follow up and the inclusion of a treatment seeking population must be considered when assessing confidence in these results. However, these pilot studies have evolved from other work by this group of colleagues, which is more thoroughly tested and reported upon (Bamberg, Findley and Toumbourou, 2006).

Within the discussion from Gregg and Toumbourou (2003) it was also indicated that increased family attachments through the skills and strategies encouraged during the intervention may be occurring thus increasing the presence of family attachments as a protective factor in line with the social development model described by Catalano and Hawkins (1996). Community involvement, considered a protective factor within the social development model as well, was also listed as a positive outcome from the intervention. This study highlights the links between attachment, the social development model and the benefits of considering these particular theoretical standpoints within work with affected families. Although this study was assessed as having mostly good heuristic relevance to this field the use of interview methods resulted in poor procedural rigor. Caution should be paid to applicability of these results to the wider population but they do support interesting points about the effect of

addiction upon attachments within families, the subsequent negative impact this can have and the possible options for attempting to work with these difficulties.

Community reinforcement approaches in gambling addiction

Hong and Yang (2013), utilises the Community Reinforcement and Family Training programme (CRAFT, Smith and Meyers, 2004) with family members whose relative is gambling. This is an extension of the Community Reinforcement Approach (CRA) which focuses on the restructuring of social, family and vocational aspects of everyday living for relatives so that abstinence is encouraged (Copello et al., 2005). Hong and Yang (2013) compared the CRAFT approach with a 12 Step Gam-Anon intervention using a between subjects design. Significant decreases in depression and state anger were recorded for the experimental group compared to the Gam-Anon control group. However, no significant differences were observed between groups for; level of interpersonal communication, trait anger, mode of anger expression and self-esteem. Along with the other study focusing on gambling (Rychtarik and McGillicuddy 2006) Hong and Yang (2013) included measures of anger whereas the majority of studies looked at coping and symptoms of strain, among other variables. This difference appears to be related to the general historical consensus within research on gambling addiction that psychological distress can be measured by depression, anxiety and anger and that treatment should aim to reduce and

measure these as indicators of successful skills developments and treatment effectiveness.

Stress and coping across pathological gambling and substance misuse

Thirteen articles are underpinned by the contemporary stress and coping perspective. As identified in the introduction the Stress-Strain-Coping-Support model has developed throughout the last 10 years and become integral to development of the '5 step' approach (Copello et al., 2009) to interventions which consists of five specific elements; 1. listening non-judgementally, 2. providing information, 3. counselling ways of coping, 4. discussing increased social support, 5. considering further options for help and support. Across the 13 papers presenting this approach there are several different findings which help to show the versatility, feasibility, and developmental parts of the approach. In Copello et al. (2009) a brief '5 step' intervention is compared with a full version where both described significant reductions in symptoms of stress and coping behaviour regardless of intervention type. This was followed up in the Velleman et al. (2011) study who found that those differences remained at 12 months and there was again no change across groups. Both studies scored highly on the evaluative framework scoring 79% and 75% respectively using a randomised cluster trial design, several stages of follow up analysis and robust outcome measures. However, Copello and colleagues (2007, 2008, 2009, 2011) also stated that individual participant randomisation would have added further confidence in the results as would a larger follow up sample. The Orford et al. (2007) qualitative

study also investigated the results related to the original study. They achieved a high rating of QIII 97% which was largely characterised by excellent relationships to the body of existing evidence, and descriptive vividness such as clarity and credibility of description. All three studies showed support for both the brief and full arm of the '5 step' intervention whilst also raising a tension in the literature regarding cost savings and patient preference.

The following studies also specifically featured the '5 step' model; Rey et al. (2011), Sainz and Rey (2003), Velleman et al. (2008), Templeton et al. (2007), and Templeton (2009). What is particularly useful for this collection of studies is the information they provide on applying the intervention to different countries and clinical settings. Rey et al. (2011) and Sainz and Rey (2003) completed their work in indigenous parts of Mexico; whilst the authors reported significant results in the right direction and evidence that the '5 step' was a feasible approach for this population, both samples were small and did not report high methodological quality. With the exclusion of Templeton (2009), the other studies reported positively that the '5 step' approach had high feasibility for use in Italy in terms of both applicability to Italian participants, staff groups and completing the intervention in existing services. Studies found similar results to those achieved in the UK; major and significant changes were recorded across coping strategies and symptoms of strain and 79% of staff stated they felt it was an effective and helpful intervention. Thus suggesting that the stress-coping theoretical perspective is applicable in other countries. Similarly, Templeton (2009) showed applicability and feasibility of the approach in a voluntary service in Bristol.

Hansson et al. (2004), Hansson et al. (2006), Rychtarik & McGillicuddy (2005), and Rychtarik & McGillicuddy (2006) focused more upon the use of specific coping skills training in comparison to other interventions like the 12 step approach or information only sessions. These four studies have the highest methodological ratings across the literature; the results are particularly useful to the discussion regarding outcomes for participants and will be explored in more depth in the following sections.

In summary, the theoretical understanding across the literature has been derived from work completed previously as described in the introduction. Family systems approaches and the stress-strain-coping-support models have dominated the theoretical underpinnings of most studies. As a result findings have, on the whole, added support to the theories of understanding affected family members. However, there is room to expand upon the evidence base further to understand the conceptual links that are drawn within the models.

(iii) Intervention characteristics.

Thus far considering the methodological quality and theoretical understanding has enabled a discussion on how 'good' the methods within which the studies were tested were and what explanations have fuelled and supported the intervention type. Therefore the following section considers what the literature provides in terms of understanding which *characteristics* of the interventions appear to work best.

Format, length, and style

Without exception interventions ran as groups on a weekly or fortnightly basis for 6-8 weeks, usually consisting of 4-6 sessions ranging from 60-120 minutes long. The longest group ran for 12 sessions although the mean number attended was only 4 (Howells and Orford, 2006). The majority of interventions were accompanied by written material in the form of self-help manuals or worksheets and sessions were delivered by trained professionals from a range of backgrounds; alcohol and drug project workers, therapists, primary care staff and volunteers. In most cases the credentials of the facilitator and programme researchers were provided but little was said about the impact that this may have, other than stating that researchers had been blinded to treatment conditions for three studies (articles 10, 11 and 4 as shown in Appendix 4). Some studies assessed participant satisfaction with the intervention with a formal measure (Sainz & Rey, 2003; Rychtarik & McGillicuddy, 2005; Gregg & Toumbourou, 2003), whilst the remainder collected anecdotal evidence or relied

upon formal measure of symptoms of strain to consider the effectiveness of the intervention. Creating an open, safe and supportive environment in which to discuss their experiences was described across the studies to help aid treatment goals, however it was much easier to ascertain if this had been achieved in the qualitative studies. Overall interventions took a fairly standardised approach to delivering the material and maintaining treatment integrity.

Inclusion criteria

Visually represented in Appendix 4 as articles 10, 11, 4 and 5, Rychtarik & McGillicuddy (2005), Rychtarik & McGillicuddy (2006), Hansson et al. (2004), and Hansson et al. (2006), have several 'green' scores and high methodological quality ranging from 79%-85%. These studies provide useful information about which intervention characteristics are particularly effective, for example, all four studies had very clear inclusion criteria for the intervention participants. In three cases the participants were specifically spouses/partners of a gambler or person with a substance misuse problem (Rychtarik & McGillicuddy 2005, Rychtarik & McGillicuddy 2006, Hansson et al., 2004). Hansson et al. (2006) was a randomised control trial design and all the participants were university students with at least one parent with an alcohol problem. Due to the proposed risk that children of drinkers can develop harmful drinking behaviour themselves the study compared three groups who utilised manualised approaches; (a) an alcohol intervention programme, (b) a coping intervention programme or (c) a combined programme. Significant improvements in drinking patterns was observed in

groups (a) and (c) however no differences were observed in ability to cope across the groups even though it did improve. However, participants were more satisfied if they had done the combined group (b). The intervention was therefore targeted to those groups and awareness of their specific needs was written in to the programme. This and other studies suggests that having clear inclusion criteria is an important characteristics of interventions in this area.

(iv) Population differences.

Many different individuals linked to an individual with an addiction problem are likely to be affected in some way. Therefore the group of potential participants for interventions is considerably varied and vast; women, men, young people, all ages, mixed ethnicity/culture, siblings, spouses, parents and partners may all be affected. As identified earlier Toumbourou and colleagues (2003, 2008) have focused their recent work on the inclusion of siblings into interventions with positive results and several studies have successfully looked at spousal relationships rather than just family members generally. The most significant population trend within the literature was the large proportion of women who took part in the research. The following section will focus on how the literature has explained and reported this observation.

Gender

All studies had a much larger percentage of females than males within their sample. This ranged from 62% – 100%, with a mean percentage of 84%

females and 16% males across the sample. A full breakdown of participant gender is given in Appendix 7. As described in Howells and Orford (2006), there is a general consensus across the evidence base that women tend to take more responsibility for family health problems and there are generally more male drinkers than females in the population. Howells and Orford's (2006) sample had one of the highest proportions of female participants at 94-100%. Interestingly 52% of the sample stated that they were seeking help for the relative with the addiction and not themselves, adding support to the general view that women often take responsibility for family health problems. Howells and Orford (2006) reported significant changes within the sample showing reduction in symptoms of strain and increases in coping ability; thus suggesting that although women may not be directly accessing help for themselves, positive change can still occur regardless of the gender differences and motivation for seeking support.

Rychtarik and McGillicuddy (2005) discuss the increased risk of difficulties such as depression, trauma and stress related disorders in women whose partner has an alcohol problem; they also tend to use health services more frequently than other groups. In terms of methodological quality this study was the highest scoring quantitative approach with 85% and an all female sample. In this study the authors compared the use of a coping skills intervention (CST), the '12 step' approach for women whose partner has an alcohol addiction/physically violent (TSF) and a delayed treatment control group (DTC). These were a gender specific programme with a focus on the experiences of women in this type of relationship. Both interventions showed significant reduction in symptoms of

depression but there were no differences across groups post treatment or at the 12 month follow up.

Given the evidence presented by the literature it could be argued that as more women are likely to present or come in to contact with services generally it stands to reason why more studies have been completed specifically on women and higher percentages of females across studies for mixed gender. However, it is also possible that men are being underrepresented and this was a highlighted gap given that women are also drinking at increased levels worldwide (Alcohol Concern, 2014).

(v) Outcomes for participants

Without exception the purpose of all the interventions reviewed here was to educate, support and improve coping abilities in family members. Each participant will have already held in varying degrees their own strategies, skills and rules for living before they received the support delivered so perhaps most importantly across all the findings it is vital to understand what the participants gain from the interventions; in what ways do the outcomes manifest and how do they help the family members to cope.

Coping

Rychtarik and McGillicuddy (2005, 2006) completed studies with women whose partner has an alcohol problem combined with violence and also men with pathological gambling; they suggest that the distress observed in partners of

gamblers is brought on by the gambling itself and a lack of coping skills to cope with it. Their results showed that a coping skills programme for these women in particular was effective in reducing depression and anxiety and increasing coping skills in dealing with the stress that arises as a result. Twelve out of the seventeen studies specifically measured coping skills using a reliable and validated measure, usually the Coping Questionnaire (Orford et al., 2005). Results also suggested that the specific interventions for coping (e.g. the '5 step' approach) resulted in significant improvements in coping behaviour across the literature. However this would be strengthened by more follow up studies, larger samples and randomised trials. As previously identified on some occasions there were significant improvements which differed from delayed treatment groups but did not differ from other intervention groups such as information only, raising the question of what in particular is it that leads to increased coping within an intervention that has multiple parts.

Accessing social support

Further to managing coping behaviours there has been an increasing emphasis on the role of social support across the literature. However attempts to measure this have been mixed and there has been no specific measure utilised with this particular review. Step 4 of the '5 step' model focuses on support and the literature has highlighted a gap in how to record and measure this, especially in terms of how it may or may not influence the stress-strain relationship.

Outcomes for relatives

The focus of this review was interventions for family members in their own right, this has included; mothers, fathers, spouses, daughters, sons and siblings of alcohol and drug misusers. Several of the studies reported here have also recorded subsequent positive changes in the relative with the addiction too, even though no direct intervention was completed with them (Rychtarik & McGillicuddy 2005; Hansson et al., 2004; Howells & Orford 2006; Howells & Orford, 2006; Rychtarik & McGillicuddy, 2005, 2006; Toumbourou & Bamberg 2008; Velleman et al., 2008). Improvements were noted during the course of the interventions; such as reductions in gambling, alcohol use, arguing and violence. Some of these were maintained at 12 month follow ups. Although this has been mostly recorded by the family member this has provided secondary gains from the results and an idea of the wider picture beyond the individual family members. Of course it is impossible to know for sure that those improvements were as a direct result of the family members interventions but they do at the very least suggest areas for future research. As a result this would increase our understanding of the relationships between family members and the relative with the addiction

Overall it would appear that certain characteristics were related to positive outcomes across the samples studied. For example all studies had a significantly larger proportion of female participants, fourteen of the seventeen studies focused upon adults and there was also a higher percentage of spouses (as opposed to parents or children of those with the addiction).

DISCUSSION

The aim of this literature review was to consider the effectiveness of interventions from the last 10 years for family members in their own right affected by a relative's addiction and this has been achieved. Seventeen studies were reviewed and there was a mix of methodological quality evaluated using two systematic evaluative frameworks. However, this is to be expected whilst reviewing an identified emerging area and the majority of the authors have been able to identify the limitations of their studies. They have often introduced those issues early on; for example some studies were piloting interventions or working with existing services that were not structured to encompass work with families. As identified in the results the use of a quantitative matrix (Downs and Black, 1998) has highlighted the advantages of implementing randomised control trials but has also shown that good external and internal validity can be achieved within the limits of multi-modal approaches and well-organised, systematic research studies within clinical settings. Given that this is an emerging area qualitative methods are also expected while theories and models of understanding the effects and causal factors of family dysfunction and symptoms of strain are developed. Qualitative research plays a role in guiding theoretical development and providing the foundations for more detailed quantitative work as time progresses.

The stress-coping perspective and the importance of family systems has dominated the findings and demonstrated how these theories have successfully

resulted in some effective interventions. However it is not clear whether the theoretical underpinnings are always supported by the literature. The stage of the addiction (i.e. the length of problem, abstinence status and frequency of use) is not always explicitly considered. Furthermore, coping interventions did not always show improvements against other treatment groups such as the alcohol intervention programme in Hansson et al. (2006). This could be suggesting that information giving alone also aided coping in family members and therefore theories may need to be more encompassing of educating family members and the stage at which they are experiencing the addiction. That is, a family who have been coping with an addiction for many years compared with those who have just become aware of the problem will be experiencing different levels of stress, different symptoms of strain and have more or less developed coping skills and support networks.

Interventions were consistent in format and delivery across the literature and the results showed on the whole that the use of group work and self manuals can be effective. The use of randomised trials has produced some robust and useful results on which to continue to develop interventions for family members in their own right. However, the need for inclusion of wider family members such as siblings was also acknowledged in some studies. Considering the effect of addiction and resulting dysfunction within family systems has been shown to be vital in helping participants to cope, particularly in improving satisfaction within relationships as well as coping skills development and accessing social support. Working with the whole family unit appeared to have benefits and focused their

studies in this way. This poses many questions around the best way to proceed in delivering interventions. Historically there was concern that family members did not receive support in their own right, and the inclusion of all family members would continue this work. However, the substance misusing or gambling relative is still part of that system and therefore when and how to incorporate work they are completing with their family members is still unclear.

Specific work for family members in their own right must continue to flourish and gain credence within the addictions field. As the results have shown it has theoretical support but as yet has not amassed a large enough evidence base. This has been challenging due to the varied population within which interventions must be tested; siblings, parents, spouses, men, women and so on. There is an agreed viewpoint that helping families not only encourages the relative with the addiction but also benefits the other members of the family and in turn saves money. However, due to commissioning restrictions and a focus upon cost effectiveness within the current financial climate it is possible that interventions for family members will continue to be less of a priority.

Clinical implications

Applied Research

The models presented and tested out have specifically focused on the interaction between real life and psychological health. Through the richness of qualitative research (Gregg & Toumbourou, 2003, Orford et al., 2007, Templeton et al., 2007) and anecdotal parts from other studies it would appear that these

interventions equip participants to take new and/or developed skills back in to their everyday lives. For example, Gregg and Toumbourou (2003) described direct observations of the use of psychological models such as Diclemente's Cycle of Change (1993) within the family home when one parent stated that the terms included in the Cycle of Change (pre contemplation, contemplation etc) had become part of family discussions. When considering the aims of psychological education it is promising to be made aware of a family including this knowledge in discussions and suggests it has been something they have found useful in exploring the difficulties within the family. When considering heuristic relevance and applicability within the Cesario et al. (2001) evaluation criteria this finding is a good indicator that psychological education in practice can be of benefit in this situation.

Dilemmas in practice

There have been several dilemmas raised by the literature and how these may or may not be addressed in clinical practice. As responsible clinicians considering the results with more depth and consideration in this way highlights dilemmas and encourages ethical consideration and reflections on working practices. For example, cost effectiveness versus personal choice within health services is highlighted specifically by a sequence of two studies which document the comparison of a brief and full version of the '5 step' model by Copello et al. (2009) and Velleman et al.'s (2008) follow up study. The results indicated that there were not significant differences in findings between the brief and full

intervention types at post intervention or the 12 month follow up. However, when considering the qualitative findings participants commented that they benefitted from the opportunity to talk to someone face to face rather than referring to a self help manual independently. As indicated in the literature the brief intervention was relatively more cost effective than the full version and therefore providing this within services would provide a value for money, evidence based intervention. It is difficult to justify spending more on an intervention based on qualitative results alone especially when family services are often in addition to addiction service delivery. In contrast to the evidence in favour of the brief intervention ethical considerations are also raised in relation to literacy and cognitive functioning as not all family members presenting for support may be able to use a self-help manual effectively. The ability to adapt and amend an intervention must be considered in future service delivery to meet these needs.

The present review has moved forward from the existing reviews in only including studies that focus on interventions and outcomes for family members in their own right from the last 10 years. There has been considerable support for the application of the Stress-Strain-Coping-Support Model alongside the '5 step' method and other coping skills based interventions for individuals. However, appreciation of the need to consider the influence of wider family systems, community and society influences has also been noted in line with the integrative model presented by Kalischuk et al. (2006).

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CHAPTER TWO – EMPIRICAL PAPER

Testing the effect of social support on the relationship between stress and symptoms in family members of people with addiction problems.

Word count 7595

ABSTRACT

This study focused on affected family members of relatives who have a substance misuse problem. Previous findings have explored affected family member's coping styles and support networks; leading to the development of the Stress Strain Coping Support (SSCS) Model based on a psychological understanding of responses to stressful circumstances. However, more research is required to investigate the component parts and conceptual links of the SSCS model. For the present study it was hypothesised that; the greater the affected family member stress the greater the affected family member strain (symptoms) and that three different types of social support will have a moderating effect on the amount of strain experienced by affected family members.

Sixty nine family members were recruited across a range of existing support groups in the UK West Midlands and the North West. The following variables were measured with validated standardised questionnaires; *stress*, *strain*, *coping* and *social support* . A Multiple Mediation Model tested the mediating effects of coping as a single construct and three types of social support on the relationship between stress and strain. The results showed that as stress increases more symptoms of strain are observed, further to this negative support from others served to increase symptoms of strain. Other types of social support and coping were not found to have a mediating effect. The limitations of the research and the implications of the findings are discussed in relation to the application of the SSCS model to clinical practice.

INTRODUCTION

“Drugs and alcohol misuse is a complex issue. While the number of people with a serious problem is relatively small, someone’s substance misuse and dependency affects everybody around them. (Public Health England, 2014).

In 2009, Copello, Templeton, and Powell completed a landmark estimation study in the UK to attempt to estimate how many family members were affected by a drug using relative. With an estimation of over 1.4 million people in the general population affected it was concluded that the majority of these individuals would be carrying a heavy burden of caring for and/or living with their relative or partner. A detrimental effect on family members happiness, well-being and quality of life is highlighted with a need for further studies to aid a better understanding of this area. The study also considered costs and savings in relation to this problem and the care that family members provide; as a result it is likely that family members providing a caring role are saving considerable amounts of government funds. Clearly supporting the families of drug users is a significant issue in the UK today and is affecting the lives of many. The study reported by Copello et al. (2009) did not include figures in relation to alcohol use and the impact on families. It is estimated nationally that 2.6 million children in the UK are living with parents who are drinking hazardously and 705,000 are

living with dependent drinkers (Manning, 2009; Turning Point, 2011; and Alcohol Concern, 2014).

Studies looking at the experiences of children living with substance misuse highlight the negative impact that substance misuse has upon many areas of family life such as finances, routines, reduced levels of cohesion, low levels of enjoyable family activities, poor relationships within families and reduced communication (Orford et al. 1998; Velleman, 2010). This can take the form of arguing, domestic violence, a negative atmosphere, neglect, and abuse. As a result some children experience problems in education, criminal behaviour, behavioural issues and their own substance misuse (Velleman and Orford, 2009).

On the whole affected family members have higher levels of mental health difficulties, most commonly depression and a higher frequency of physical health problems such as gastrointestinal concerns and injuries (Svenson, Forster, Woodhead, & Platt, 1995; Ray, Mertens & Wiesner, 2007) when compared to the general population. They also make more use of healthcare services. Ray et al. (2007) also looked at affected family members alongside a comparison group and found they were more likely to be diagnosed with medical conditions and other psychological problems than the comparison group. Until the mid 2000s there was very little movement in support for the families of people with addictions in the UK policies on substance misuse; when it was included it was minimal and vague (Velleman, 2010). Alcohol and drugs policies are often developed separately and as a result the policies on alcohol in particular were

neglecting to include adequate provision for the impact on affected family members. However, there has been an increased recognition of the role that families play in preventing and influencing the course of the problem, improving outcomes and helping to reduce negative effects on others (Copello et al., 2006).

The general prevalence of substance misuse.

Across the world there is thought to be approximately 15.3 million people with a drug problem, 2.5 million deaths from harmful use of alcohol (World Health Organisation, 2014) and an estimated 76 million people with an alcohol use disorder in 2005 (Obot & Room, 2005). The difficulty with estimating the specifics of substance misuse is that many published statistics only describe those people who are engaging with services, classed as 'in treatment' or presenting for health difficulties. Prevalence studies use national data to estimate how many drugs and alcohol users there are across England. It is pertinent to bear in mind that there are probably many individuals using drugs and alcohol across society that may not be included within the national estimates.

Drugs

In 2010-2011 an estimated 298,752 opiate and/or crack cocaine users were reported, with the West Midlands ranking fourth in the geographical regions with 9.77 per 1,000 of the population (National Treatment Agency, 2011). The National Treatment Agency collates information from treatment agencies across the country, and in their most recent report 193,575 adults were in treatment for

drug use; the primary drug was heroin in 80% of the cases, 8% used cannabis and 5% used powder cocaine. There were also 33,814 people who listed alcohol as an adjunctive problem (Public Health England, 2013).

Alcohol

It can be more difficult to provide explanations of prevalence nationally due to the several categories of alcohol use from low risk drinking to physical dependency. Risky alcohol use, as with drug use, can be problematic and dangerous to an individual regardless of whether it is an isolated case of 'bingeing' or a long term physical dependence (Alcohol Concern, 2014). As a result the impact on individuals and family members is likely to be widespread. In 2011 -2012 there were 200,900 hospital admissions where the primary diagnosis was attributable to the consumption of alcohol (HSCIC, 2014); a 41% increase since 2002/03. This increases to an estimated 1,220,300 admissions related to alcohol consumption where an alcohol related disease, injury or condition was the primary reason for hospital admission or a secondary diagnosis (Alcohol Concern, 2014). In 2012-2013 109,683 adults (over the age of 18 years) were recorded as receiving treatment for alcohol problems by the National Treatment Agency (2014).

Young People

In 2012-2013, 20,032 young people were accessing services for drug and/or alcohol use (NTA, 2013) and there has been a sharp rise in the use of

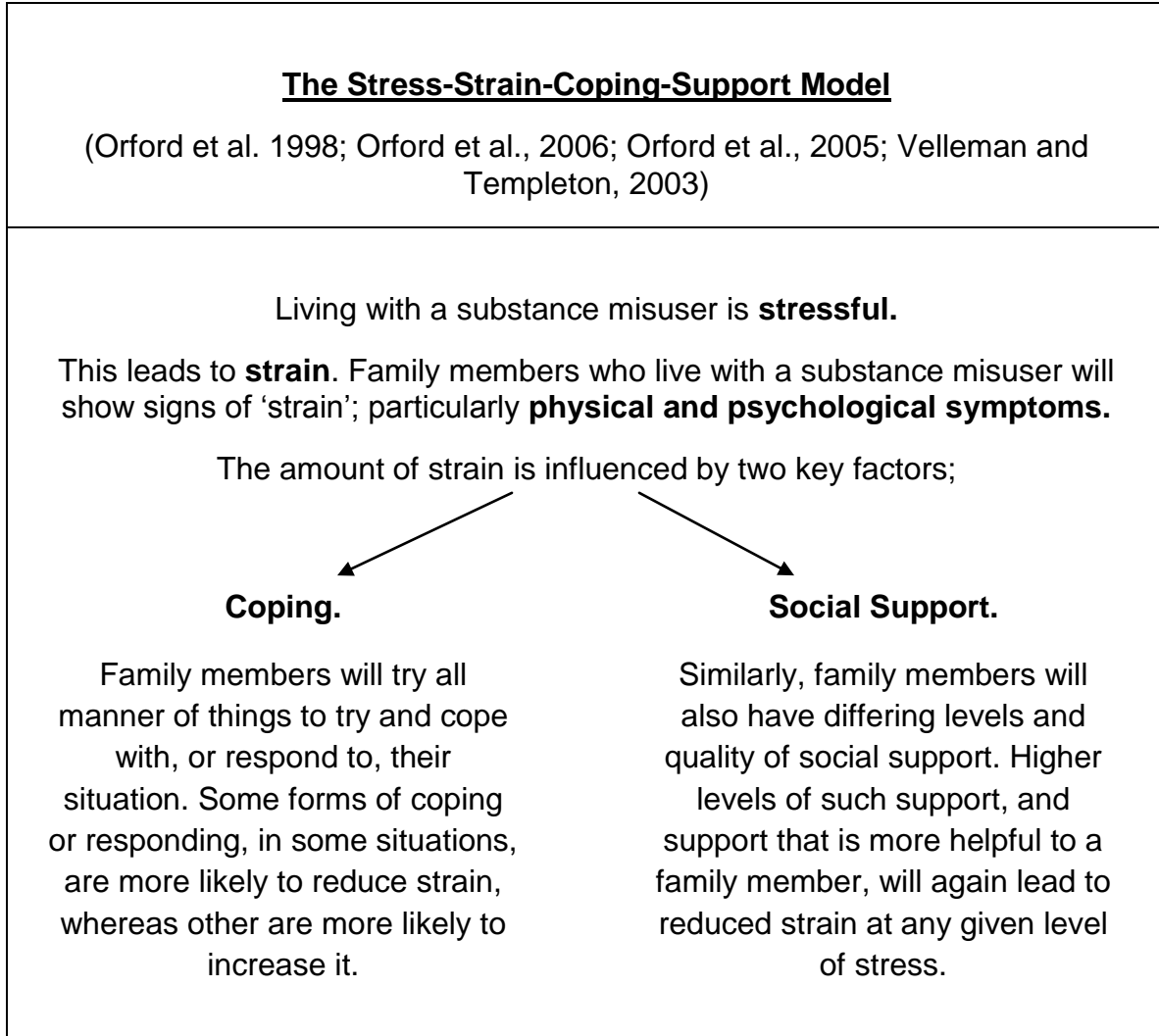
legal highs by young people. In a recent survey from the Angelus Foundation (2014) out of a 1,000 young people surveyed 45% had been offered legal highs, 58% had friends who had taken them and 39% knew where to get them.

In summary there were 323,290 adults and young people in treatment for drug and/or alcohol use last year in the UK; with the actual number of substance misuse likely to far outweigh the number of people seeking help. Sadly there were also 10,964 drug and alcohol related deaths in 2012 (Office of National Statistics, 2014); a stark reminder that substance use kills thousands of people every year. With such alarming numbers of people affected it is important to explore what is known about how families, children, partners and friends are affected by an individual's substance misuse.

Models of Understanding Affected Family Members

A body of work has been developing over the last few decades to consider what may occur within families experiencing substance misuse. The following diagram simply describes the Stress Strain Coping Social Support model as summarised by Orford et al. (2013), which is based on a psychological understanding of responses to stressful circumstances.

Figure 1. Description of SSCS model.

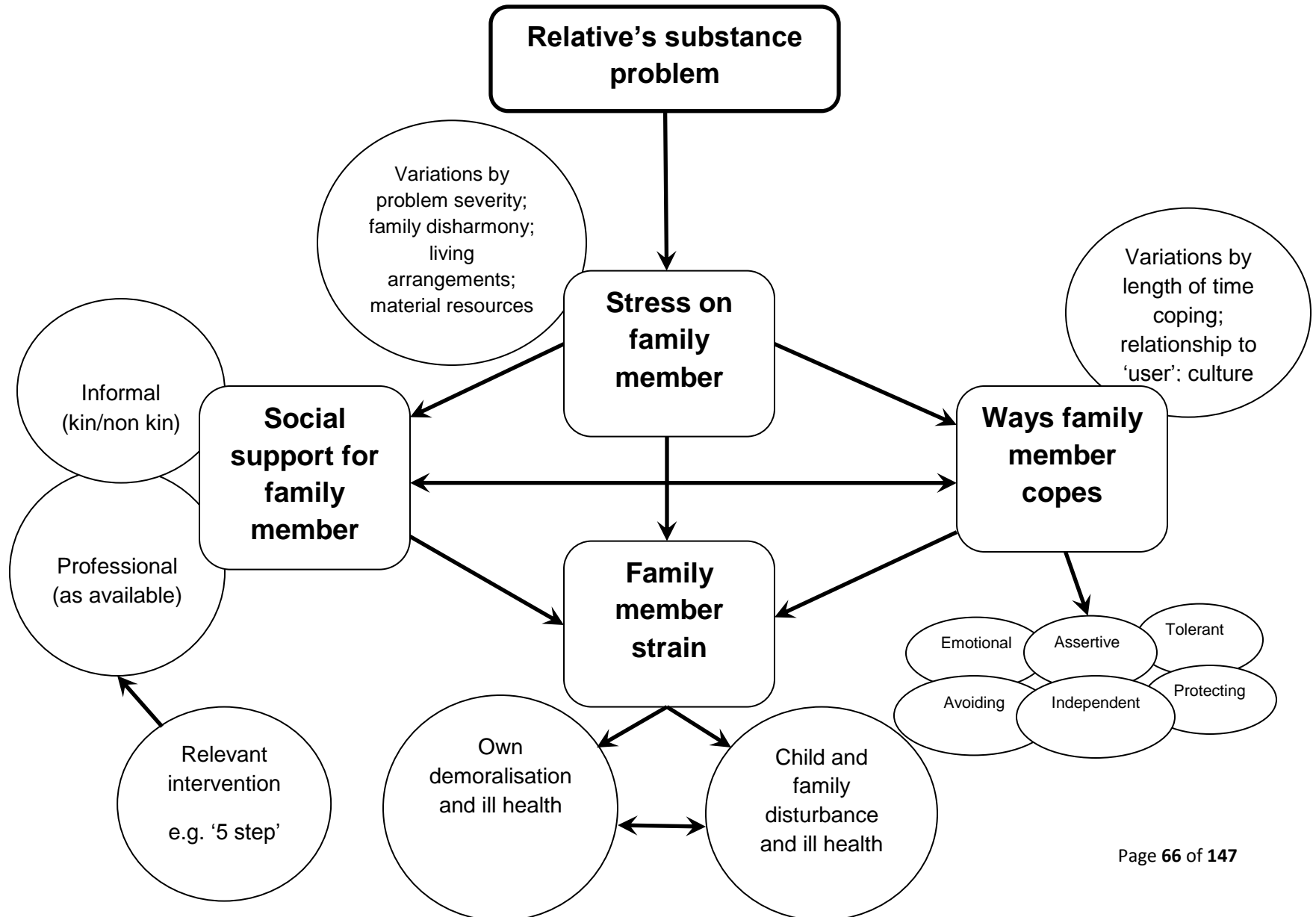


In 2010, Orford et al. described the previously hypothesised SSCS model and cemented the importance of moving away from blaming family members contributing to or causing the addiction as has been done in previous years, (i.e. dysfunction or deficiency models). It is suggested that the way a family member experiences stress and the likely outcome of symptoms of strain, should be considered as the central relationship. Exploring this further the model considers

how the family members deal with the stress of the situation by including coping and social support. For example, are they adopting a particular type of coping style and what support do they have around them from other family, friends and health professionals? Orford et al. (2010) described how this model has been applied to other circumstances such as coping with cancer or dementia giving further support for its use in underpinning current research and interventions with affected family members (Orford, 1987, Zeidner and Endler, 1996). It is also demonstrated that good social support is a resource for coping and therefore these two parts of the model are intertwined and co-exist in supporting family members to deal with the stress they are under and hopefully reduce the symptoms they experience. Figure 2 provides a more detailed version of the SSCS model described in Figure 1.

Figure 2. Schematic representation of the SSCS model.

(Orford, et al., 2012; Orford et al. 1998; Orford et al., 2006; Orford et al., 2005; Velleman and Templeton, 2003)



Testing the model

Using cross-sectional and repeated measurement studies Orford et al. (2005) tested a set of standardised measures for the assessment of affected family members of both drug and alcohol users; looking specifically at stress, coping and strain. The measures tested were; Family Member Impact Scale (FMI) (Orford et al. 1976; Velleman & Orford, 1999; Orford et al. 1998a), Symptom Rating Test (SRT) (Kellner & Sheffield, 1973), Coping Questionnaire (CQ) (Orford et al. 2001) and Hopefulness-Hopelessness scale (HOPE) (Micallef, 1995). The FMI, SRT and CQ showed good reliability and validity and were recommended for assessing the needs of affected family members (Orford et al. 2005). On mapping these findings to the Stress-Strain-Coping-Support model it was clear that the support component had not been addressed and remained unmeasured. This article argued for the need for a social support specific measure. The Stress-Strain-Coping-Support Model “has remained a simple model and has not been developed into a true theory from which hypotheses might be derived” (Orford, 2010). The social support component in particular had not been thoroughly investigated at that time therefore gaps existed to test the conceptual links between the relationships in the model; and to consider what the causal directions may be.

Social Support for Affected Family Members.

With over eight million family members thought to be negatively affected by the use of alcohol and drugs in the UK (Copello et al. 2010) developments

such as the Stress-Strain-Coping-Support model has been welcomed and applied in clinical settings with positive results (Copello et al. 2000, 2009; Orford et al. 1998a, 1998b, 2001, 2010). Advances have been made both in the UK and abroad in understanding that the use of an intervention which explore coping strategies and support mechanisms is effective when used by families affected by addiction. However, as described earlier the social support element of the model has not been empirically tested. Within this context social support is defined as a “process involving the provision or exchange of tangible or intangible resources in response to the perception that others are in need of such assistance” (Toner and Velleman, 2013, p2). As shown in Figure 2 the source of social support could be informal from other family members/friends or from a professional provision such as substance misuse project workers, GPs or social workers and lead to including an intervention such as a family support group or specific programme like the ‘5 step’ approach. Toner and Velleman (2013) have developed a measure for considering the impact of social support for affected family members. Based on the current literature (Orford et al. 2005) they described six main interrelated dimensions of support: (i) emotional, (ii) informational, (iii) social companionship, (iv) instrumental support, (v) support for coping, and (vi) attitudes and actions towards the substance using relative. Through a systematic process of development a 25-item measure has been developed with good levels of internal consistency ($\alpha = 0.812$), satisfactory levels of test-retest reliability and significant correlations in support of content validity. Qualitatively family members felt it was related to their experiences. Social

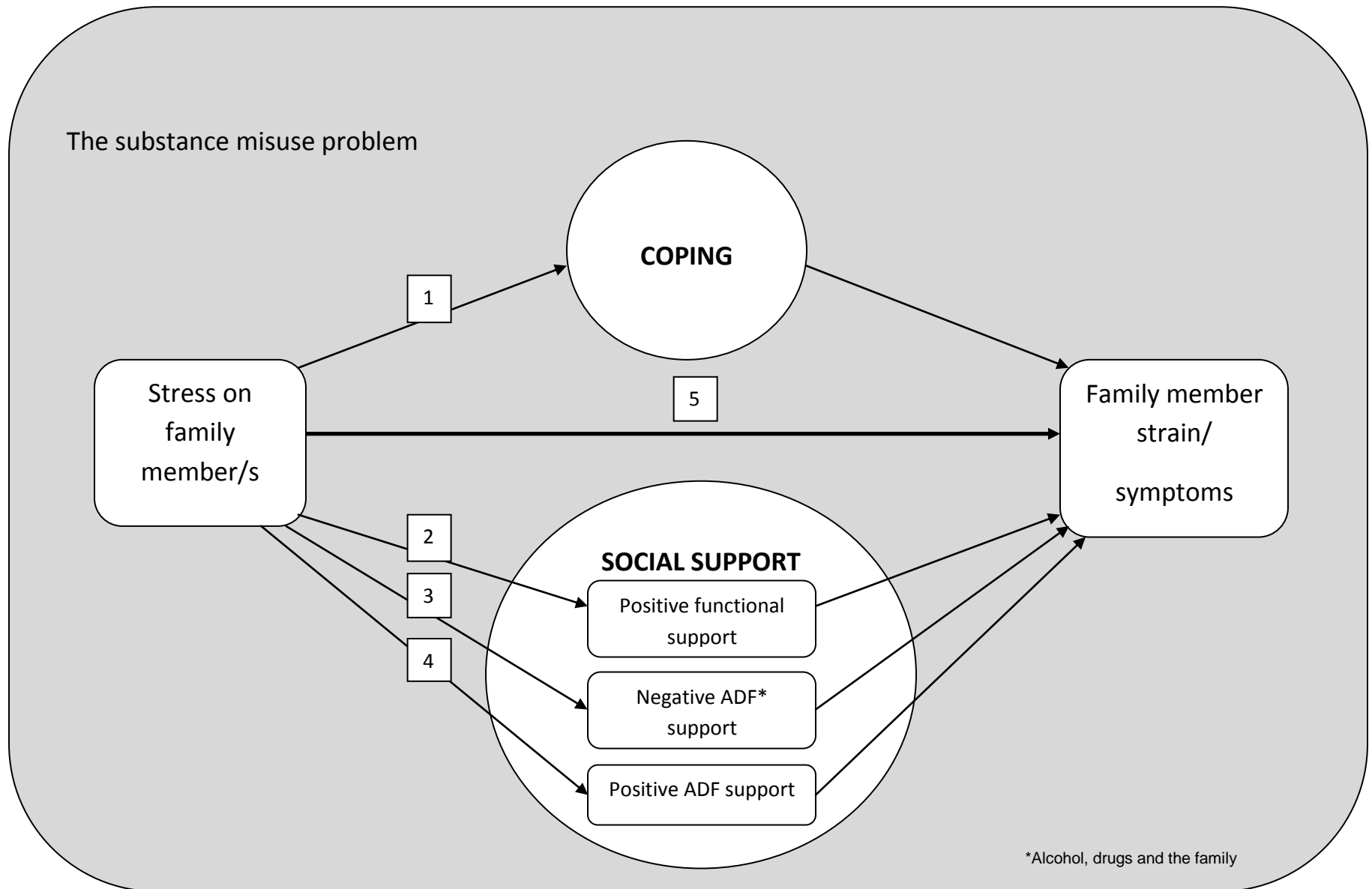
support was characterised by three distinct groups which will be explored in further depth in the section on hypotheses (page 71). As a result a tool was now available to measure social support in this context and thus allowing assessment of all four parts of the SSCS model to be tested.

The Current Study

The research study reported focused on affected family members with the aim of testing the relationships of the component parts of the SSCS model. The mediated impacts of coping (as a single construct) and three types of social support on the relationship between stress and symptoms were tested as detailed specifically in Figure 3 below. The study used the new Toner and Velleman (2013) measure of social support with robust reliability and validity reported in previous research. As all parts of the SSCS model were tested this research will not only expand on the knowledge base of the influence of support alone on the stress-symptom relationship but it will also test the conceptual links within the whole model, which has not been done fully before. This may enable practitioners to evaluate current interventions for family members against the findings of the study and in particular the components that relate to coping strategies and social support.

Ethical approval for the current study was granted by the West Midlands National Research Ethics Service in August 2013 and is included in Appendix 8.

Figure 3. Schematic diagram illustrating the specific pathways to be tested within the SSCS model.



Aims and hypotheses

As stated, this study aimed to explore the proposed SSCS model for Affected Family Members in order to further our understanding of the mediating impact of coping behaviours and social support on the relationship between stress and resulting symptoms. Three types of social support taken from Toner and Velleman (2013) were measured as well as the total score of the Coping measure (Orford et al., 2005). Specifically the study aimed to draw conclusions about what *types* of social support if any have a mediating effect in the relationship between stress and symptoms. Ultimately it is hoped that recommendations can be made for supporting affected family members and developing interventions.

The following hypotheses were tested;

1. The greater the affected family member stress the greater the affected family member strain (symptoms) (i.e. there is an association between stress and strain).
2. That the three different types of social support will have a moderating effect on the amount of strain experienced by affected family members.

The specific predictions were that;

- a. **Positive functional support;** this type of perceived support represents emotional and instrumental support, social companionship and support for coping from friends and other relations. It is specifically hypothesised that the relationship

between stress and symptoms will be mediated by positive functional support, such that higher levels of this type of support will reduce the impact of stress on family member symptoms.

- b. **Negative ‘Alcohol Drugs and the Family’ (ADF) specific support;** (i.e. support for coping and attitudes and actions towards the using relative). In this example the support comes from friends and other relations but is viewed *negatively* in its approach. It is specifically hypothesised that the relationship between stress and symptoms will be mediated by negative ADF support, such that higher levels of this type of support will increase the impact of stress on family member symptoms
- c. **Positive ‘Alcohol, Drugs and the Family’ (ADF) specific support;** (i.e. informational - formal and informal - emotional support, support for coping and attitudes and actions towards the using relative). In this example the support comes from health care professionals, literature and friends/relations. This differs from (a) in that it less about support emotionally to the family member and more about pragmatic approaches. It is specifically hypothesised that the relationship between stress and symptoms will be mediated by positive ADF support, such that higher levels of this type of support will reduce the impact of stress on family member symptoms.

3. It was predicted that coping would also have an influencing effect on the relationship between stress and symptoms of strain. Coping is part of the SSCS model and therefore was also included in the analysis.

METHOD

Design

This study used a cross-sectional design based on survey methods in the form of four validated questionnaires to measure Stress, Strain, Support and Coping in affected family members. This design enabled a more in depth study of the identified areas by providing quantitative data which in turn can inform the theoretical basis and the development of the SSCS model overall. The mediating variables tested were Coping and Social Support with the latter being subdivided into the three sub-components measured by the scale (Positive Functional Support, Negative ADF Support and Positive ADF Support).

Participants

Participants were identified via existing addictions services in the West Midlands. The majority of participants were recruited through established family groups or Project Workers providing individual support on a one to one basis. The researcher attended several family groups throughout the recruitment area, on more than one occasion, to ensure that all affected family members had been given a chance to carefully consider participating. A target of 75 participants was set for recruitment based on guidance from Tabachnick and Fidel (2006).

Inclusion criteria

The following criteria were assessed as part of an initial discussion with participants and whilst demographic details were collected:

- Participants had to have at least one relative or partner with an addiction problem within their immediate family (or extended family if the participant is felt to be in a close relationship with the relative).
- The participant had to be in regular contact with that relative and perceive that they were personally affected by the relative's addiction.
- Participants were required to be over the age of 18 years as the intended population was adults. The questionnaires being used had not been developed to complete with people under the age of 18 at the time of the study.
- Participants needed to be able converse fluently in English.
- Participants could not have a current substance misuse problem themselves. It was felt that this would considerably affect how they interact with their relative. It was also possible that their views on alcohol and/or drugs would differ from affected family members who did not have an addiction problem, thus collecting a different type of data. These criteria also protected against the possibility that participants might complete the questionnaires under the influence of substances thus having a detrimental effect on the results.
- Participants needed to have a stable mental health status (i.e. they could not be showing active signs or symptoms of mental health difficulties); It

would not have been ethical to attempt to complete questionnaires with individuals with these difficulties and may have also affected their ability to give informed consent.

Measures

The following four measures (please refer to Appendix 14) were used in the study to obtain a measure of Stress, Strain, Coping and Social Support in line with the SSCS model. All four measures have been validated and used in previous studies and were the most reliable tools available. All measures were based on self-report and required affected family members to report on their experiences from the last three months.

Stress

Family Member Impact Scale (Orford et al. 1976; Velleman & Orford, 1999; Orford et al. 1998a): This 16-item measure assesses the extent of harmful impact that an affected family member perceives the relative's drinking and/or drug taking to have on the family as a whole. The internal reliability for the full questionnaire has been recorded as 0.77. For the purposes of this study this measure provides an indication of the amount of stress that the individual and family are experiencing. Participants are asked to rate their answers based on the last 3 months on a 5 point scale as follows; not at all, once or twice, sometimes, often and don't know. Example items are as follows; "Does your

relative pick quarrels with you?”, “Has your relative sometimes threatened you?” and “Has your relative upset family occasions?”

Strain

Symptoms Rating Test (SRT, Kellner and Sheffield, 1973). This measure captures the level of strain exhibited by affected family members by asking 30 items about both physical and emotional health symptoms of strain that are commonly displayed. Such as “how frequently have you experienced feeling nervous/poor appetite/unhappy or depressed in the last 3 months?” Participants had to indicate whether they have experienced each of the symptoms in the last three months from the options of ‘never, sometimes or often’ (scored as 0, 1, or 2). It is recommended by professionals in this field due to its simplicity, brevity and reliability (Orford et al., 2005); test-retest reliability of 0.94, internal reliability of 0.93 and a Cronbachs Alpha 0.86.

Coping

Coping Questionnaire (CQ, Orford et al. 2001). The 30-item CQ measures the way family members react to the alcohol and/or drug use and cope with the situations they are experiencing. Participants have to choose from four response options of ‘no, once or twice, sometimes, or often’ (scored as 0, 1, 2 or 3). Orford et al. (2005) report the internal reliability coefficient of the CQ as 0.85. The CQ has three subscales which highlight different types of coping; Engaged (CQ-E), Tolerant (CQ-T) and Withdrawal (CQ-W). Example items are:

- CQ-E - “Sat down together with him/her and talked frankly about what could be done about his/her use of drugs?”
- CQ-T – “Given him/her money even when you thought it might be spent on alcohol and/or drugs?”
- CQ-W – “When he/she was under the influence left him alone to look after him/herself or kept out of his/her way?”

Social Support

Alcohol, Drugs and the Family Social Support Scale (ADFSSS, Toner and Velleman, 2013). Preliminary findings on the measure indicated satisfactory levels of internal consistency for the overall measure ($\alpha = 0.812$), and each constituent subscale as described below. Participants are asked to rate their experiences from the last 3 months on the following scale; never, once or twice, sometimes, or often. The ADFSSS uses 25 items to measure three types of social support an affected family member may be experiencing;

- Positive Functional Support (PFS), e.g. “Friends/relations have helped cheer me up” and “Friend/relations have put themselves out for me when I needed practical help”. Internal consistency was $\alpha = 0.913$.
- Negative Alcohol Drugs and the Family Support (NADFS), e.g. “Friends/relations have avoided me because of relatives drinking or drug taking” and “Friend/relations have said that my relative does not deserve help”. Internal consistency was $\alpha = 0.815$.

- Positive Alcohol Drugs and the Family Support (PADFS), e.g. “Health/social workers have given me helpful information about problem drinking or drug taking” and “I have confided in my health/social care worker about my situation”. Internal consistency was $\alpha = 0.727$.

Procedure

Participants were made aware of the study through a variety of methods as described, including advertisements, presentations and flyers (see appendix). Individuals who showed an interest in taking part in the research were given the option to contact the researcher or to give their contact details so that they could be approached. Once in contact with the researcher they were given an information sheet (Appendix 8) which provided further details of the study, and the consent form. The researcher usually checked the exclusion and inclusion criteria at this point. Given the potentially sensitive nature of the topic individuals were provided with comprehensive verbal and written information to support them in giving informed consent (Appendix 9). Participants were offered a minimum of 24 hours to consider whether they would like to take part in the research and an opportunity to ask further questions if required.

Once the individual had had adequate time to consider participation in the research their decision was communicated to the researcher. If they wanted to take part the next stage started by confirming the participant met the inclusion criteria, completing the consent form and arranging a time and method by which

to complete the questionnaires. If for any reason their inclusion was not appropriate the researcher spoke with them and explained the reasons. If any issues arose from this the researcher had planned to direct them to the local services however this did not occur during the research.

The measures were administered face to face, over the phone or left with the participants to complete in their own time. Participants were asked to complete the questionnaires alone and to avoid discussion of their answers with others. On finishing the questionnaires all participants were asked; *“has your time completing these questionnaires resulted in any concerns, worries, or difficult thoughts that you feel you may need further support with at this time?”* No participants reported needing to stop or becoming distressed during questionnaire completion. Some stated it had prompted them to reflect on their experiences and were grateful for the opportunity to contribute to a piece of research on this area.

Participants were thanked for their time and given a final explanation of what would happen next, when the research would be finished, at what point they would need to withdraw their data should they change their minds about being included and an opportunity for any final questions. No participants requested to withdraw their data in the course of the study.

Data Analysis

The demographic data obtained from the sample were explored using descriptive statistics. To test the relationship between stress and resulting symptoms of strain experienced by affected family members a correlation was used to analyse the direct relationship between the independent and dependent variable. Using a multiple mediator model (Preacher and Hayes, 2004, 2008) the data were then analysed further in order to test the potential mediating effects of coping style, positive and negative social support.

The multiple mediator model applied within this analysis (Preacher and Hayes, 2008) uses both asymptotic and resampling strategies for assessing and comparing indirect effects. Using multiple mediation analysis allows an assessment of the possible mediators (coping styles and 3 types of social support) in the relationship between stress on symptoms of strain. This analysis employs bootstrap estimates of the direct and indirect effects of stress on symptoms of strain. Preacher and Hayes (2008) assert that this method is both more reliable in relation to deviations from parametric assumptions and is more robust in small samples.

RESULTS.

Sample characteristics

In total 69 affected family members took part in the study. Tables 1 and 2 present the demographic information of the affected family members and associated information about the relatives with the alcohol and drug problem within the family (in eight cases the affected family members did not supply the age of their relatives). Even though the relatives were not direct participants the information in Table 2 provides a description to aid further understanding of the experiences and domestic arrangements of the affected family members.

Participant ages ranged from 34 to 76 years old with the mean age of participants being 59 years ($SD = 9.93$). Female affected family members made the larger group making up 72.5% of the sample and 27.5% of the sample being male. In total 98.6% of the sample were classed as White British, with 1.4% describing their heritage as mixed. There were six categories of relationship between the affected family member and the substance using relative; the largest being 72.5% parent to the relative and 18.8% husband or wife. Twenty six percent of the sample lived with their substance using relative compared with 73.9% who did not. affected family members reported that in their opinion the relative's addiction problem had been present for a range of 1 to 30 years in total. The average length was 11.59 years ($s.d. 7.75$). Sixty four out of the 69 participants received support from professional services.

Relative's main substance of use was reported as follows; 59.4% used alcohol, 30.4 used drugs and 10.1% used both. Seventy one percent of relatives

were male and 29% were female with an average age of 40.1 (age range 18-72). Further to this 77.3% of relatives were receiving support compared to 21.7% who were not. Twenty nine per cent of the relatives were currently in a residential rehabilitation unit, whilst 71% were in the community. Of particular note is the rate of abstinence (i.e. completely free of alcohol and/or drugs) of approximately half of the relatives (50.7%).

Table 1. Summary of demographic information for family members (n=69).

		Mean (s.d)	Range
Age of AFM		59.2 (9.93)	34-76
AFMs description of addiction problem duration in years		11.59 (7.75)	1-30
		N	(%)
Gender of AFM	Male	19	27.5
	Female	50	72.5
Relationship of AFM to relative	Husband	3	4.3
	Wife	10	14.5
	Partner	1	1.4
	Child	1	1.4
	Parent	50	72.5
	Other	4	5.8
Ethnicity	White British	68	98.6
	Mixed Race	1	1.4
AFM receiving support.	No	5	7.2
	Yes	64	92.8
Relative living with AFM	No	51	73.9
	Yes	18	26.1

Table 2. Summary of demographic information for relatives with alcohol and/or drug use (n=69, unless otherwise stated).

		Mean (s.d)	Range
Age of relative (n=61)		40.1 (12.55)	18-72
n=69			
		N	(%)
Gender of relative	Male	49	71
	Female	20	29
Main substance of use	Alcohol	41	59.4
	Drugs	21	30.4
	Both	7	10.1
	Unknown	0	0
Relative receiving support.	No	15	21.7
	Yes	54	78.3
Relative in rehabilitation	No	49	71
	Yes	20	29
Relative currently abstinent	No	34	49.3
	Yes	35	50.7

Table 3. Summary of test variables.

		Mean	Standard deviation
Family Member Impact Scale	Total	25.78	10.67
Symptom Rating Test	Total	24.72	14.15
Coping Questionnaire	Total	38.71	20.28
Alcohol Drugs and the Family Social Support Scale	Positive Functional Support	25.25	7.03
	Negative ADF Support	16.60	5.66
	Positive ADF Support	8.54	4.94

Comparing the means

Using a 2-sample t-test mean scores recorded in this sample were compared with the baseline measures of a primary care study by Copello et al. (2009). Table 4 below compares the means of the Family Member Impact Scale, Symptom Rating Test and Coping Questionnaire. Seven out of the 8 means in Table 4 (recorded by the Copello et al., 2009) show significantly higher scores at baseline than the present community based study, suggesting that the sample studied here had lower levels of stress factors, symptoms of strain and different coping. Furthermore only 26.1% lived in the same house as the AFM compared to 76% and 71.4% of the Copello et al. groups 1 and 2. In the current sample

92.8% of the AFMs were receiving support from a family group (and some were attending one to one sessions from a Project Worker) as well as 78.3% of the relatives also receiving support for their substance problem. This data was not available for the Copello et al. (2009) sample so comparison of these figures is not possible. The results of the mean score for the Coping Questionnaire full sample were $t = 1.91$ ($p=0.058$) suggesting a trend towards significance. In summary, the results of the current sample shows significantly different results from previously published studies.

Table 4. Comparison of test variable means with other AFM data.

Measure	Research Study			
	1	2	3	4
	Copello et al. (2009) Pre Group 1 (n=47-51)	Copello et al. (2009) Pre Group 2 (n=88-92)	Copello et al. (2009) Full sample scores post intervention	Present Study (2014) (n=69)
Family Member Impact Scale mean	30.56* (S.D. 8.70)	30.65*** (S.D. 7.70)	N/A	25.78 (S.D.10.67)
Symptom Rating Test mean	33.34*** (S.D. 12.89)	33.93**** (S.D. 11.81)	29.58* (SD 13.51)	24.72 (S.D.14.15)
Coping Questionnaire mean	52.28**** (S.D. 16.26)	52.15**** (S.D. 13.81)	44.18 (SD 18.91)	38.71 (S.D.20.28)

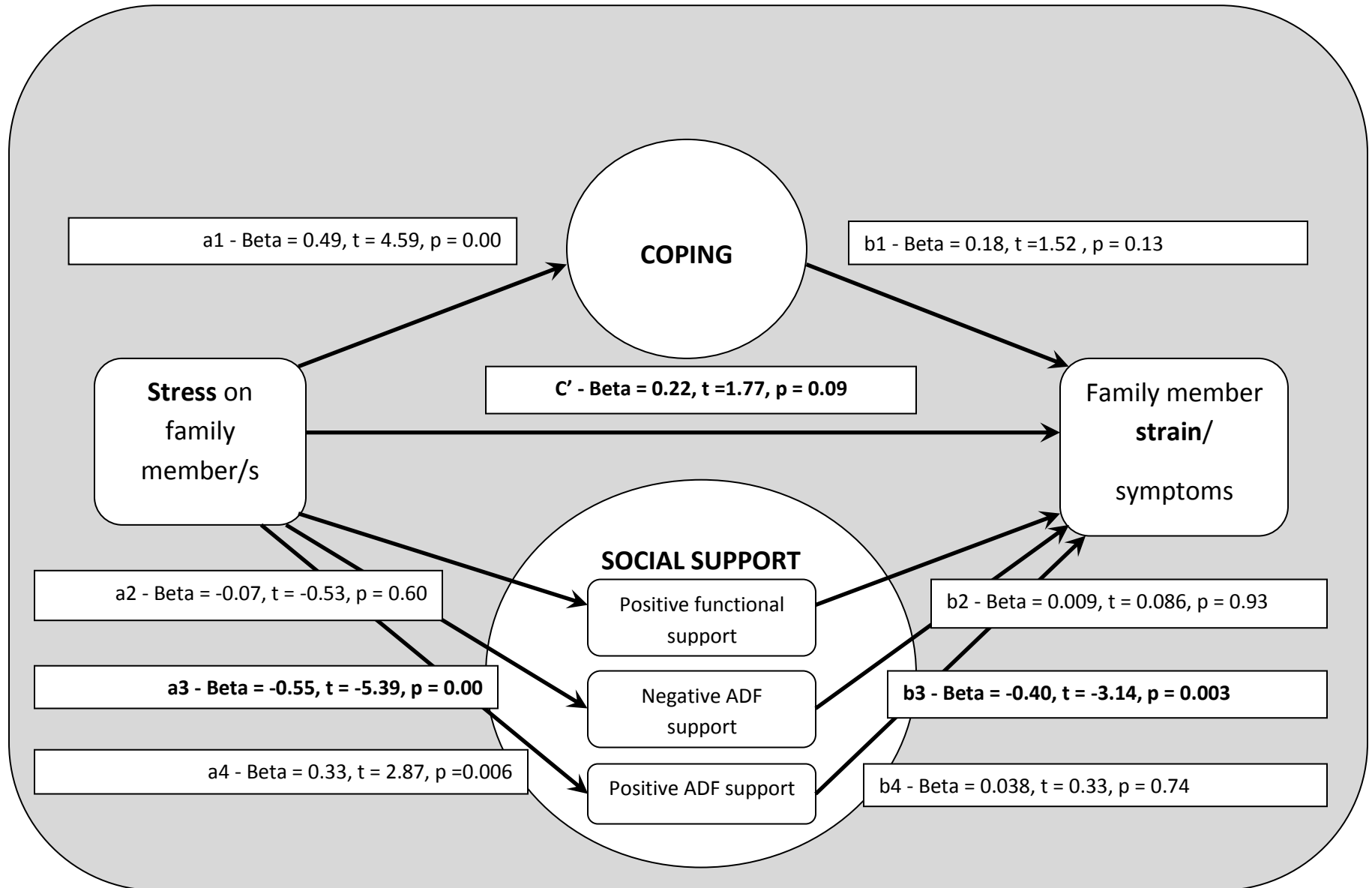
* <0.05 **<0.01 ***0.001 ****<0.001

Mediation analysis.

The mediated model presented in Figure 3 was evaluated using the procedure for multiple mediator models that is described by Preacher and Hayes (Preacher & Hayes, 2004, 2008). This method is a generalisation of the SOBEL method described by Baron and Kenny (1986), and allows for multiple mediated pathways and bootstrap estimates of the direct and indirect (i.e. mediated) effects. The bootstrap parameter estimates have the dual advantage of being independent of the parametric assumptions required by the Baron and Kenny method (Preacher & Hayes, 2008) and parameter estimates are robust in small sample circumstances (Fritz & MacKinnon, 2007). All the variables were transformed into z score (Mean = 0, SD=1) prior to the analysis so that the magnitude of the path coefficients could be directly compared.

A multiple mediator model was calculated with family member stress (FMI score) as the predictor variable and family member strain (SRT score) as the outcome variable (see figure 3). In addition four mediated paths were modelled (coping behaviour, and three measures of social support; positive functional, negative ADF and positive ADF). A significant direct effect between family member stress and strain was observed ($\beta=0.54$; CI 0.32 to 0.75). When the four mediated pathways ($\beta=0.32$; CI 0.12 to 0.53) were considered this direct effect was reduced to a non-significant value ($\beta=0.22$; CI -0.03 to 0.46). Only the negative ADF pathway showed statistical significance ($\beta=0.22$; CI 0.06 TO 0.41).

Figure 4. Mediation model with the statistical effects of the pathways within the SSCS model.



DISCUSSION.

The main aim of this study was to test the conceptual links between the four component elements of the Stress Strain Coping Support (SSCS) model with family members affected by a relative's substance misuse by collecting data with four reliable quantitative questionnaire measures. This was also the first study to include the newly developed Alcohol Drugs and the Family Social Support Scale (Toner and Velleman, 2013). Hypotheses were tested using a mediational analysis (Preacher and Hayes, 2004, 2008) with data from a group of 69 family members recruited from a range of support groups.

In summary, the majority of participants were white females in their late 50s, and answering the questionnaires in relation to their son or daughter who did not live with them. The majority of substance using relatives were males in their 40s, most likely to be using alcohol, receiving support from services, and living in the community. In contrast to other samples within similar research just over half of the substance using relatives were abstinent from drugs and/or alcohol at the time of the study (35 out of 69). The results obtained need to be interpreted bearing in mind these group characteristics as half of the sample of family members for example may be experiencing a later stage in the development of the problem of families affected by a relative's addiction when compared to other research samples. Therefore, the current results provide an opportunity to consider the application of the Stress-Strain-Coping-Support Model in a somewhat different group although still one including affected family members. A discussion of the comparison of the results with a similar study of family members is discussed initially followed by a discussion and exploration of the results in relation to the hypotheses and finally the study limitations.

Exploring the Results in Comparison with Other Studies.

Table 4 presents a comparison of the data collected by Copello et al. (2009) with the results of the present study. The mean scores for stress, strain and coping for the present study were significantly lower than those reported before and after the implementation of both a brief and full '5 step' intervention in the Copello et al. (2009) study. It is clear that stressors are still experienced when the substance user is abstinent but this would suggest that a less intense level of stress and resulting lower level of symptoms of strain may be present on this occasion. The mean coping score of the whole Copello et al. (2009) sample *post intervention* was not significantly different from the present results suggesting that this sample coped in similar ways to the sample in the previous study once they had undergone the '5 step' intervention. It can be confidently stated that this sample had a higher level of coping behaviour as a whole.

Qualitatively family members shared stories during data collection of refusing to house or financially support their relative anymore and this is confirmed by the data on accommodation status. Only 26.1% lived in the same household as the affected family member compared to 71.4% to 76% of the Copello et al. (2009) sample. This means that for the half of the sample that *did* have an active substance misuse problem, half of those did not live with the affected family member; resulting in physical distance from the relative and less responsibility for them. Interestingly, 92.8% of the sample attended a family group (and some were also attending one to one sessions with a Project Worker) and 78.3% of the substance using relatives also received support for their problem. These data were not available for the Copello et al. (2009) sample but perusal of other reported studies shows that participants are usually seeking structured

professional support for the first time or have been recruited specifically to receive the support (e.g. Copello., 2007; Templeton et al., 2007) when the data is collected at baseline. The sample of this study, in contrast, had already received support from professionals and this appears to be shown by the lower mean coping score. It can be confidently stated that this sample has a higher level of coping behaviour skills. Taking all this in to account it is likely that the personal circumstances of this sample are markedly different to previously studied samples and as a result the way they are affected by their relative's problem and how they respond to it is not necessarily explained in the same way as more active and intense experiences.

It is therefore possible to assume that the data collected in this study is representative of a group whereby the substance misuse problem impacts differently on the family member currently, therefore there are less active physical and psychological symptoms and coping strategies, alongside social support networks in the form of professionals and other family members in the support groups they attend. Out of the five organisations involved in the study four organisations utilised group content based on the '5 step' Method (Copello et al., 2010). The remaining organisation adopted a style more akin to Al-Anon but the researcher observed elements of the '5 step' Method within the group sessions delivered. Information on the length of time participants had been receiving this support would be useful especially given the need to inform future service delivery. The groups used by the participants within this study were not time limited and provided a consistent, weekly session if required. Further exploration of the outcomes of long term weekly support groups versus one off time limited interventions would be a beneficial addition to the evolving evidence base.

Hypothesis testing

1. The Relationship between Stress and Strain

It was initially hypothesised that the greater the affected family member stress the greater the symptoms of strain as per the Stress-Strain-Coping-Support Model. A significant correlation between stress and strain was found in support of previous evidence that higher levels of stress are associated with increased strain. However, when the four pathways were considered this was reduced to a non-significant value and the only mediated pathway that was shown to be significant involved negative alcohol drugs and the family support. This is further discussed below.

2. The Effect of Social Support on the Stress-Strain Relationship.

It was hypothesised that the three different types of social support proposed by Toner and Velleman (2013) would have a mediating effect on the amount of strain experienced by affected family members.

2a. Positive functional support represents emotional and instrumental support, social companionship and support for coping from friends and other relations. It was specifically hypothesised that the relationship between stress and symptoms of strain would be mediated by positive functional support, such that higher levels of this type of support would reduce the impact of stress on family member symptoms. A significant result was not observed within this pathway so does not lend support to the hypothesis that this type of positive support from others reduces symptoms.

2b. Negative 'Alcohol Drugs and the Family' (ADF) specific support represents support for coping, attitudes and actions towards the using relative from friends and other relations. However, distinctively different from the other types of support this is viewed *negatively* in its approach (i.e. criticism of their actions or the substance using relative). It was specifically hypothesised that the relationship between stress and symptoms would be mediated by negative ADF support, such that higher levels of this type of support would increase the impact of stress on family member symptoms. *The significant result reported here has shown that for this group of family members negative support from others did predict symptoms of strain.* So even though these family members are coping well and experiencing less stress on the whole when others provide negative support they reported that their levels of strain increased. It is possible that having found strategies and support that work well for them the occurrence of negative support (i.e. unhelpful and often uninformed criticism can affect this). Perhaps it affects their confidence in what they have been doing and brings doubt to their approaches. This is also a useful finding because negative ADF support is in contrast to that provided by support groups and interventions, thus suggesting that this type of support may need to be avoided.

2c. Positive 'Alcohol, Drugs and the Family' (ADF) specific support is informational, formal/informal emotional support, support for coping and attitudes and actions towards the using relative from health care professionals, literature and friends/relations. This differs from hypothesis 2a in that it is less about support emotionally to the family member and more about pragmatic approaches. It is specifically hypothesised that the relationship between stress and symptoms will be mediated by positive ADF support, such that higher levels of this type of

support will reduce the impact of stress on family member symptoms. A significant result was not observed within this pathway so does not lend support to the hypothesis that positive support of this type from others reduces symptoms. Similarly to hypothesis 2a it is possible that participants have not experienced this type of support from friends or relations in the last three months due to the status of the substance misuse problem of their relative (i.e. over half of the sample had relatives who were abstinent). Further to this another explanation could also be related to the type of family member recruited; they were all treatment seeking participants who had already received lots of support from the family groups they were part of. It is also important to take in to consideration that some participants did not think that the term health/social care worker included the voluntary sector or drugs and alcohol workers so may not have recorded the support they did receive. This is discussed further in the limitations section below.

3. The Effect of Coping on the Stress-Strain Relationship.

The final hypothesis proposed that coping would also have an influencing effect on the relationship between stress and symptoms of strain. This was not found as the path mediated via coping responses was not significant when tested as part of the full model. This may be due to the fact that coping behaviours in this group were less frequent or that the negative social support is more important in mediating the stress-strain pathway when the full model is tested within one single analysis

It is possible that further research which divides the severity, substance misuse status and duration of the problem more specifically would show different

outcomes accordingly. Templeton et al. (2007) reported that some of the staff members found recruiting family members more difficult when they were not in a state of crisis and because their relative had either recently or currently engaged with services. This suggests perhaps that at the point that relatives have active involvement with a service, and possibly become abstinent, that AFM stress levels decrease thus meaning that coping and social support has become less significant at this time.

It is also useful to consider the styles of coping measured by the Coping Questionnaire (CQ) and whether this may have had an effect on the results. The CQ within this study looked at three coping styles; engaged, tolerant and withdrawal. These three styles of coping are quite different and as shown by Figure 2 a potential six coping styles, or more, may be present within this population. Therefore this could be suggesting that the measure doesn't capture all potential types of coping and/or that an overall score is not sensitive enough to show a mediated pathway. Breaking down the coping styles further in terms of the results would provide more detailed information about the role of coping within this model.

Overall there is a significant effect of negative ADF support whilst the other two forms of positive support do not appear to mediate the relationship between stress and strain. However, as participants have displayed coping behaviours similar to that of other samples post intervention, have significantly lower levels of stress/strain and relatives with less active substance misuse problems (who don't live with them) it would seem possible then that this particular group are more advanced in managing their experiences of having a relative with a substance

misuse problem and under less stress as measure by the Family Member Impact Scale.

Strengths and limitations

Recruitment

The sample recruited had a wide range of ages and duration of problem. Family groups were delivered by statutory, non-statutory and voluntary services and had a mix of philosophies and approaches. Despite being part of the original study aims participants were not recruited from the GP surgeries due to the time restrictions of data collection and the logistics of accessing suitable candidates. It is possible that this may have had an effect on the results obtained, especially when considering that the results reported from the Copello et al. (2009) study were obtained in a primary care setting. All participants except five were in a family support group or had just started in one. It was hoped that if participants from these sites were *not* receiving professional support the data collected would have provided valuable information about the applicability of the SSCS model in that context. Furthermore it may have given more detailed information about the effect of stress of AFMs when there has been no opportunity to receive professional support. However, this was only a possibility; further research in this area would benefit from focusing exclusively on AFMs during periods of increased stress due to their relatives use to understand how best to support that specific population. This point raises questions for future research and development of understanding about the maturation of substance misuse problems and in turn the

maturation of the problem for family members and indeed how they cope with their stress and strain that they experience.

Treatment seeking population

It is possible that participants who are more open about their problems with their relatives took part in the research, therefore resulting in a particular group from the population being studied. For example, 92.8% of the sample were already receiving support and therefore may have been keener to take part in the research; especially if they were not experiencing increased stress and high symptoms of strain as would appear to be the case from the results of the test variables. Furthermore half of the sample had a relative who was not (to the best of their knowledge) currently using substances. Although difficult to ascertain it is possible that other affected family members declined the research because they may have found it difficult to talk about their current difficulties; perhaps suggesting that their difficulties were more distressing at the current time. This may have affected the results and failed to provide information about all family members living with addiction.

Measures

All measure were based on self-report and only asked family members to rate their experiences from the last three months. The accuracy of self-report measures can be questionable as it requires a certain amount of self-reflection ability which not all participants may have. During the research there was some confusion from participants about how to answer the question about professional support. Some participants did not understand the wording of the questions about

social care/health care workers, i.e. they took this literally to mean social workers or medical staff *only* (such as GPs) and *not* voluntary services, drugs and alcohol workers etc. This was raised by a participant about two thirds of the way through data collection and others agreed with them. It is possible that some participants did not answer this question accurately therefore views on the prevalence and quality of professional support may not represent their actual experiences. This may also add to the explanation as to why non-significant results were observed within the positive functional support pathway. Further use of the social support measure requires further research to explain more fully how to interpret the questions about professional support.

Summary of conclusions

Addiction and the effect on family members is a transient and dynamic problem. The current study has explored the conceptual links between the 4 component parts of SSCS model to help explain how family members are affected and what elements are involved in mediating the relationship between stress and strain. In summary the results support the relationship between stress and strain, suggest that negative support is not helpful to family members and that more specific sampling may be required to understand more fully the needs of family living with addiction. This supports the need for continued work with family members as increased symptoms of strain results in both physical and psychological symptoms which are in turn damaging to the individuals themselves, family systems and are more than likely to result in costs to health services and beyond. Furthermore, in relation to clinical implications, is the suggestion that more widespread health promotion about the effects of addiction on family

members would be a crucial addition to current services. By raising awareness in this way, such as the campaigns that are run about domestic violence, family members that may not be aware that help is available or even that the symptoms of strain that they are experiencing are related to their relatives addiction, may be able to make positive changes in their lives and in turn cope more successfully with their relative. In terms of social support it is concluded that further research is required to fully understand the role of social support within the SSCS model. The current study suggests that family members do not benefit from negative support and that this is increasing symptoms of strain. The current interventions used with this type of sample supports the use of approaches such as the '5 step' model which encourages family members to develop supportive and helpful support networks. These results support this approach and specifically appears to be recommending that family members do not seek support from those that are more likely to criticise them, their relative and the addiction problem.

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PUBLIC DISSEMINATION DOCUMENT.

Testing the effect of social support on the relationship between stress and symptoms in family members of people with addiction problems.

Background

Drugs and alcohol have caused harm and deaths around the world for many years. Previous estimations have suggested there are approximately 15.3 million people with a drug problem and an estimated 76 million people with an alcohol use disorder. However, drugs and alcohol do not just affect the person using them. The families of drug and alcohol users are also affected and this can cause them physical and emotional problems, financial loss, and relationship instability. It is thought that over 1.4 million people in the general population are affected and it was concluded that the majority of these individuals would be carrying a heavy burden of caring for and/or living with their relative or partner.

Studies looking at the experiences of children living with substance misuse highlights the negative impact that substance misuse has upon many areas of family life such as finances, routines, reduced levels of cohesion, low levels of enjoyable family activities, poor relationships within families and reduced communication (Velleman, 2010 and Orford et al. 1998). This can take the form of arguing, domestic violence, a negative atmosphere, neglect, and abuse. As a result some children experience problems in education, criminal behaviour, behavioural issues and their own substance misuse (Velleman and Orford 2009). The Stress Strain Coping Social Support (SSCS) model (Orford et al., 2013) is about understanding psychologically how people respond to stressful

circumstances and has been written about to help understand what it is like for families living with addiction. This is described below;

- Living with a substance misuser is **stressful**.
- This leads to **strain**.
- Family members who live with a substance misuser will show signs of 'strain'; particularly **physical and psychological symptoms**.
- **Coping** - Family members will try all manner of things to try and cope with, or respond to, their situation. Some forms of coping or responding, in some situations, are more likely to reduce strain, whereas others are more likely to increase it.
- **Social Support** - Similarly, family members will also have differing levels and quality of social support. Higher levels of such support, and support that is more helpful to a family member, will again lead to reduced strain at any given level of stress.

Aims and Objectives

This study aimed to explore the proposed SSCS model for family members in order to understand how coping behaviours and social support affect the stress that families experience and the symptoms of strain. Three types of social support were measured as well as coping to consider what *types* of social support have an influencing effect between stress and symptoms of strain. Ultimately it was hoped that recommendations can be made for supporting family members and programmes to support them.

This was broken down in to 3 areas to be tested;

4. The greater the family stress the greater the family member strain (symptoms), i.e. there is a link between stress and strain.
5. That the 3 different types of social support will have a influencing effect on the amount of strain experienced by family members. These were;
 - a. **Positive functional support**, this type of support represents emotional and instrumental support, social companionship and support for coping from friends and other relations. It is suggested that that higher levels of this type of support will reduce the impact of stress on family member symptoms.
 - b. **Negative 'Alcohol Drugs and the Family' (ADF) specific support**, i.e. support for coping and attitudes and actions towards the using relative. In this example the support comes from friends and other relations but is viewed *negatively* in its approach. It is suggested that higher levels of this type of support will increase the impact of stress on family member symptoms
 - c. **Positive 'Alcohol, Drugs and the Family' (ADF) specific support**, i.e. informational - formal and informal - emotional support, support for coping and attitudes and actions towards the using relative. In this example the support comes from health care professionals, literature and friends/relations. This differs from (a) in that it less about support emotionally to the family member and more about practical approaches. It is suggested that higher levels of this

type of support will reduce the impact of stress on family member symptoms.

6. It was also predicted that coping would have an influencing effect on the relationship between stress and symptoms of strain.

Method and Procedure

The study uses questionnaires to find out information from family members who have agreed to take part. They were identified from addictions services in the West Midlands. The majority of family members were recruited through established family groups or Project Workers providing individual support on a one to one basis. The researcher attended several family groups throughout the recruitment area, on more than one occasion, to ensure that all family members had been given a chance to carefully consider participating.

Findings

In summary, the majority of participants were white females in their late 50s, and answering the questionnaires in relation to their son or daughter who did not live with them. The majority of substance using relatives were males in their 40s, most likely to be using alcohol, receiving support from services, and living in the community. Just over half of the 69 substance using relatives were not using drugs and/or alcohol at the time of the study. This was different to similar studies of this kind. A discussion of the comparison of the results with a similar study of family members shows that this group of family members had significantly lower levels of stress and symptoms of strain. In terms of the areas to be tested out the study found one significant result which told us that negative 'alcohol drugs and

the family' support increased symptoms of strain in family members. None of the other stated predictions were found to be true.

Conclusions and Implications

The current study explored the links between the 4 parts of SSCS model to help explain how family members are affected and what is involved in influencing the relationship between stress and strain. In summary the results support the relationship between stress and strain and suggest that negative support is not helpful to family members. It was clear that this particular group had different needs to other similar studies on this area. This supports the need for continued work with family members as increased symptoms of strain results in both physical and psychological symptoms which are in turn damaging to the individuals themselves, family systems and are more than likely to result in costs to health services and beyond. In terms of social support it is concluded that further research is required to fully understand the role of social support within the SSCS model. The current study suggests that family members do not benefit from negative support and that this is increasing symptoms of strain. The current interventions used with this type of sample supports the use of approaches such as the '5 step' model which encourages family members to develop supportive and helpful support networks. These results support this approach and specifically appears to be recommending that family members do not seek support from those that are more likely to criticise them, their relative and the addiction problem.

APPENDICES

Appendix 1. Instructions for Authors for Nominated Journals. Addiction and Research and Theory.

INTRODUCTION Submission of a paper to *Addiction Research and Theory* will be taken to imply that it represents original work not previously published, that it is not being considered elsewhere for publication, and that if accepted for publication it will not be published elsewhere in the same form, in any language, without the consent of editor and publisher. It is a condition of the acceptance by the editor of a typescript for publication that the publisher automatically acquires the copyright of the typescript throughout the world.

SUBMISSION OF MANUSCRIPTS All submissions should be made online at the *Addiction Research and Theory's* Manuscript Central site. New users should first create an account. Once a user is logged onto the site submissions should be made via the Author Centre.

Each paper will be read by at least two referees.

FORMAT OF MANUSCRIPTS Manuscripts should be typed in double spacing with wide margins. Please upload an anonymous main document and a separate title page with author information.

Title page: This should contain the title of the paper, a short running title, the name and full postal address of each author and an indication of which author will be responsible for correspondence, reprints and proofs. Abbreviations in the title should be avoided.

Abstract: This should not exceed 250 words and should be presented on a separate sheet, summarising the significant coverage and findings.

Key words: Abstracts should be accompanied by up to six key words or phrases that between them characterise the contents of the paper. These will be used for indexing and data retrieval purposes.

TEXT HEADINGS All headings in the text should be set over to the left-hand margin, and the text should begin on the next line;

Type first level (sectional) headings all in capitals.

For second and third level headings, only the first letter of the first word should be a capital.

Underline third level headings.

REFERENCES Style, statistical reporting, and reference citations should conform to the American Psychological Association's guidelines, from the *APA Publication Manual*, fifth edition. To conform with the *APA Publication Manual*, fifth edition, references should be alphabetized at the end of the manuscript text, in the following formats: Kozlowski, L. T., Henningfield, J. E., & Brigham, J. (2001). Cigarettes, nicotine, and health. Thousand Oaks, CA: Sage Publications. Weinstein, N. (2001). Smokers' recognition of their vulnerability to harm. In P. Slovic (Ed.), *Smoking: Risk, perception, & policy* (pp. 81-96). Thousand Oaks, CA: Sage Publications. Perkins, K. A., Donny, E., & Caggiula, A. R. (1999). Sex differences in nicotine effects and self-administration: review of human and animal evidence. *Nicotine & Tobacco Research*, 1, 301-315.

FIGURES All figures should be numbered with consecutive Arabic numerals, have descriptive captions and be mentioned in the text. Figures should be kept separate from the text but an approximate position for each should be indicated in the margin. It is the author's responsibility to obtain permission for any reproduction from other sources.

Preparation: Figures must be of a high enough standard for direct reproduction. They should be prepared in black (india) ink on white card or tracing paper, with all the lettering and symbols included. Axes of graphs should be properly labelled and appropriate units given. Photographs intended for halftone reproduction must be high quality glossy originals of maximum contrast. Redrawing or retouching of unsuitable figures will be charged to authors.

Size: Figures should be planned so that they reduce to 10.5cm column width. The preferred width of submitted drawings is 16-21cm, with capital lettering 4mm high, for reduction by one-half. Photographs for halftone reproduction should be approximately twice the desired size.

Captions: A list of figure captions should be typed on a separate sheet and included in the typescript.

TABLES Tables should be clearly typed with double spacing. Number tables with consecutive arabic numerals and give each a clear descriptive heading. Avoid the use of vertical rules in tables. Table footnotes should be typed below the table, designated by superior lower-case letters.

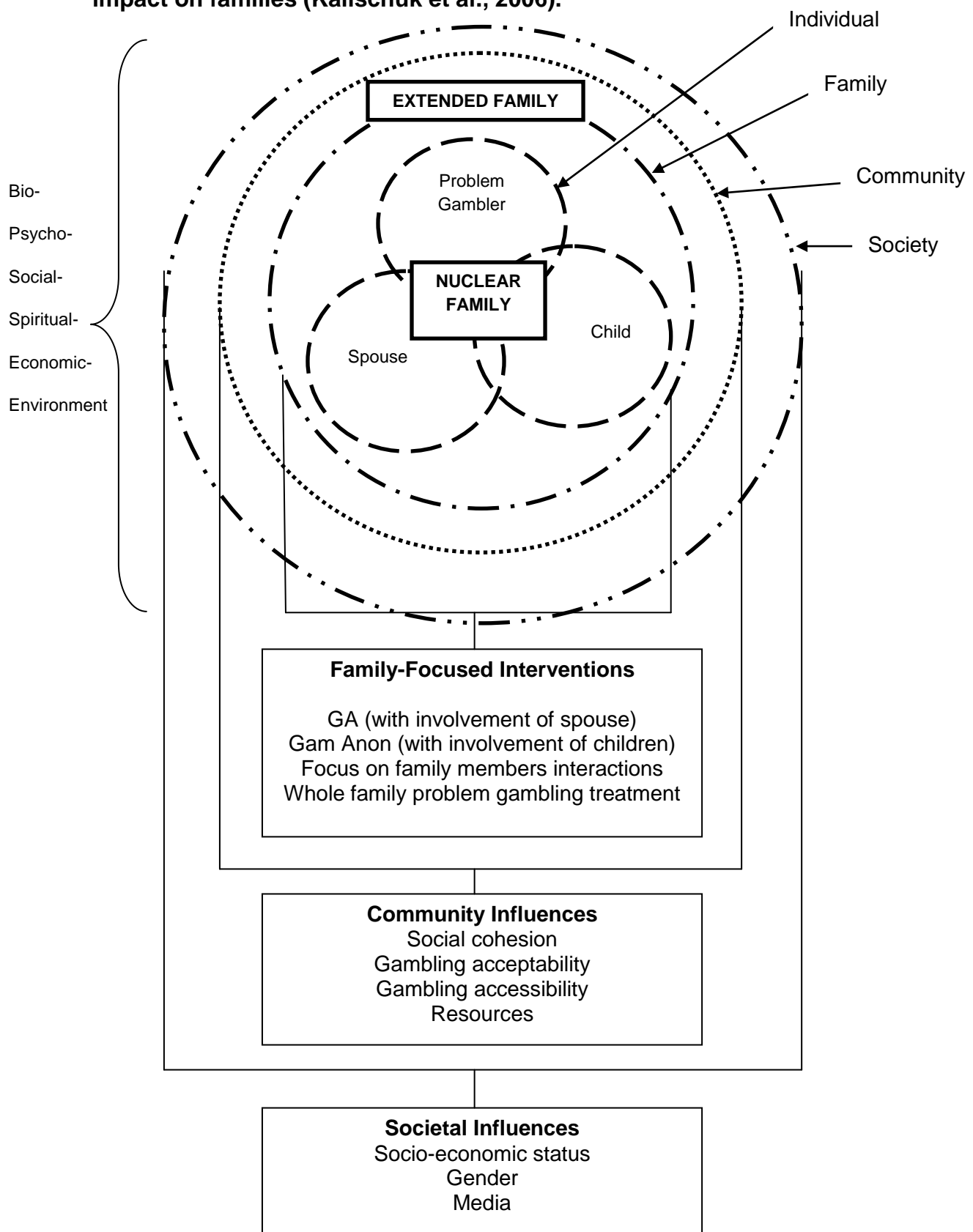
PROOFS Authors will receive proofs (including figures) by air mail for correction, which *must* be returned within 48 hours of receipt. Authors' alterations in excess of 10% of the original composition cost will be charged to authors. **OFFPRINTS AND REPRINTS** Offprints and reprints of articles published in Addiction Research and Theory can be obtained through Rightslink®. Copies of the Journal can be purchased separately at the author's preferential rate of £15.00/\$25.00 per copy. **PAGE CHARGES** There are no page charges.

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Please note that Informa Healthcare are signatories of, and respect the spirit of, the STM Agreement regarding the free sharing and dissemination of scholarly information.

It is the policy of all Informa Healthcare to adhere in principle to the Conflict of Interest policy recommended by the International Committee of Medical Journal Editors (ICMJE). (<http://www.icmje.org/index.html#conflict>).

Appendix 2 Integrated model for understanding problem gambling and its impact on families (Kalischuk et al., 2006).



Appendix 3 Evaluative Framework for Quantitative Research (Downs & Black, 1998).

Reporting

1. Is the hypothesis/aim/objective of the study clearly described?
2. Are the main outcomes to be measured clearly described in the introduction or methods section?
3. Are the characteristics of the patients included in the study clearly described?
4. Are the interventions of interest clearly described?
5. Are the distributions of principal confounders in each group of subjects to be compared clearly described?
6. Are the main findings of the study clearly described?
7. Does the study provide estimates of the random variability in the data for the main outcomes?
8. Have all important adverse events that may be a consequence of the intervention been reported?
9. Have the characteristics of patients lost to follow up been described?
10. Have actual probability values been reported for the main outcomes except where the probability value is less than 0.001?

External validity

11. Were the subjects asked to participate in the study representative of the entire population from which they were recruited?
12. Were the subjects who were prepared to participate representative of the entire population from which they were recruited?
13. Were the staff, places and facilities where the patients were treated, representative of the treatment the majority of patients receive?

Internal validity - bias

14. Was an attempt made to blind study subjects to the intervention they have received?
15. Was an attempt made to blind those measuring the main outcomes of the intervention?
16. If any of the results of the study were based on "data dredging", was that made clear?
17. In trials and cohort studies, do the analyses adjust for different lengths of follow up of patients, or in case-control studies, is the time period between the intervention and outcome the same for cases and controls?
18. Were the statistical tests used to assess the main outcomes appropriate?
19. Was compliance with the intervention/s reliable?
20. Were the main outcome measures used accurate (valid and reliable)?

Internal validity - confounding

21. Were the patients in different intervention groups (trials and cohort studies) or were the cases and controls (case-control studies) recruited from the same population?
22. Were study subjects in different intervention groups (trials and cohort studies) or were the cases and controls (case-control studies) recruited over the same period of time?
23. Were study subjects randomised to intervention groups?
24. Was the randomised intervention assignment concealed from both patients and health care staff until recruitment was complete and irrevocable?
25. Was there adequate adjustment for confounding in the analyses from which the main findings were drawn?
26. Were losses of patients to follow up taken into account?

Appendix 4. Colour Coded Matrix of Quantitative Research Quality.

	Article number													
	10	11	4	2	5	17	12	14	16	1	15	6	7	9
Question No	Methodology													
	RCT/RT					Within Subjects (including pilots)					Between subjects			
1.														
2.														
3.														
4.														
5.														
6.														
7.														
8.														
9.														
10.														
11.														
12.														
13.														
14.														
15.														
16.														
17.														
18.														
19.														
20.														
21.														
22.														
23.														
24.														
25.														
26.														
Overall Quality (%)	85	81	79	79	85	75	44	46	75	48	58	60	56	52

Appendix 5. Evaluative Framework for Qualitative Research.

Category 1: Descriptive Vividness

- Is essential descriptive information included
- Is there clarity in the description of the study?
- Is there credibility in the description of the study?
- Is there adequate length of time spent at the site to gain the familiarity necessary for vivid description?
- Does the researcher validate findings with the study participants?
- Is the descriptive narrative written clearly? (vividly?)

Category 2: Methodological Congruence

a. Rigor in documentation

- Are all elements or steps of the study presented accurately and clearly?

Introduction

- Phenomenon is identified
- Philosophical base of study is made explicit
- Purpose and type of qualitative study is stated
- Study questions or aims are identified
- Assumptions are identified

Literature review

Statements of methods

- Access to site, sample, and population
- Researcher's role and interview structure

Data collection

Data analysis

Conclusions/findings

b. Procedural rigor

- Has the researcher asked the right questions? Does the researcher tap the participant's experience versus her or his theoretical knowledge of the phenomenon?
- Did the researcher describe steps taken to ensure that the participant did not misrepresent herself or himself, or misinform the researcher?
- Did the researcher describe steps taken to deter the informant from substituting supposition about an event rather than recalling the actual experience?
- Did the researcher eliminate the potential for "elite bias" by placing equal weight on high-status or elite informant data and low-status or less articulate informant data?
- Did the researcher describe steps taken to avoid influence or distortion of the events observed by her or his presence? (Like the Hawthorne effect)
- Were sufficient data gathered?
- Was sufficient time spent gathering data?
- Were the approaches for gaining access to the site or participants appropriate?
- Was the selection of participants appropriate?

c. Ethical rigor

- Were participants informed of their rights?
- Was informed consent obtained from the participants and documented?
- Were mechanisms developed and implemented to protect participants' rights?

d. Confirmability (auditability)

- Was the description of the data collection process adequate?
- Were the records of the raw data sufficient to allow judgments to be made?
- Did the researcher describe the decision rules for arriving at ratings or judgments?
- Could other researchers arrive at similar conclusions after applying the decision rules to the data?
- Did the researcher record the nature of the decisions, the data on which they were based, and the reasoning that entered into the decisions?

Category 3: Analytical Preciseness

- Did the interpretive theoretical statements correspond with the findings?
- Did the set of themes, categories, or theoretical statements depict or describe a whole picture?
- Can the hypotheses or propositions developed during the study be verified by data?
- Were the hypotheses or propositions presented in the research report?
- Are the study conclusions based on the data gathered?

Category 4: Theoretical Connectedness

- Are the theoretical concepts adequately defined and/or validated by data?
- Are the relationships among the concepts clearly expressed?
- Are the proposed relationships among the concepts validated by data?
- Does the theory developed during the study yield a comprehensive picture of the phenomenon under study?
- Is a conceptual framework or map derived from the data?
- Is there a clear connection made between the data and the (psychological) frameworks?

Category 5: Heuristic Relevance

a. Intuitive recognition

- Is the phenomenon described well?
- Would other researchers recognize or be familiar with the phenomenon?
- Is the description of the phenomenon consistent with common meanings or experiences?

b. Relationship to existing body of knowledge

- Did the researcher examine the existing body of knowledge?
- Was the process studied related to psychology and health?

c. Applicability

- Are the findings relevant to psychological practice?
- Are the findings important for the discipline of psychology?
- Can the findings contribute to theory development?

Appendix 6. Evaluating the level of evidence of the qualitative research adapted from Cesario, Morin and Santa-Donato (2001).

Evaluation Criteria		Qualitative Articles Evaluated and Scored*		
Main category	Sub-categories	3. Gregg & Toumbourou (2003) Sibling peer support group for young people with a sibling using drugs: A pilot study.	8. Orford, Templeton, Patel, Copello & Velleman (2007) Qualitative study of a controlled family intervention trial in primary care: The views of family members.	13. Templeton, Zohhadi and Velleman (2007) Working with family members in specialist drug and alcohol services: Findings from a feasibility study.
1. Descriptive vividness		66% = 2	83% = 3	84% = 3
2. Methodological congruence	a. Rigor in documentation.	63% = 2	91% = 3	95% = 3
	b. Procedural Rigor.	33% = 1	89% = 3	67% = 2
	c. Ethical Rigor.	16% = 0	100% = 3	50% = 2
	d. Confirmability (auditability).	60% = 2	60% = 2	50% = 2
3. Analytical preciseness		80% = 3	90% = 3	90% = 3
4. Theoretical connectedness		59% = 2	83% = 3	58% = 2
5. Heuristic relevance	a. Intuitive Recognition.	100% = 3	100% = 3	100% = 3
	b. Relationship to existing body of evidence.	100% = 3	100% = 3	100% = 3
	c. Applicability.	66% = 2	100% = 3	100% = 3
Final Quality Rating**		QII (66% = 20/30)	QIII (97% = 29/30)	QIII (87% = 26/30)
*Scoring Scale: 3 = Good = 75%-100% criteria met. 2 = Fair = 50% - 74% criteria met. 1 = Poor = 25% - 49% criteria met. 0 = No evidence that criteria met = <25% criteria met.		**FINAL QUALITY OF EVIDENCE RATING: QI: Total score of 22.5 – 30 indicate that 75% to 100% of the total criteria were met. QII: Total score of 15-22.4 indicates that 50% to 74% of the total criteria were met. QIII: Total score of less than 15 indicates that 50% of the total criteria were met.		

Appendix 7. Gender of participants per study.		
Article number	Female % of sample (actual number)	Male % of sample (actual number)
1.	67 (parent) / 78 (sibling)	33 (parent) / 22 (sibling)
2.	88.2 (Group 1) / 84.8 (Group 2)	11.8 (Group 1) / 15.2 (Group 2)
3.	86	14
4.	92	8
5.	72	28
6.	95.5	4.5
7.	100 (case studies) / 94 (intervention)	0 (case studies) / 6 (intervention)
8.	88.2 (Group 1) / 84.8 (Group 2)	11.8 (Group 1) / 15.2 (Group 2)
9.	100	0
10.	100	0
11.	83	17
12.	68	32
13.	80	20
14.	67	33
15.	62	32
16.	90	10
17.	85	15

Appendix 8 Letters of ethical approval.



National Research Ethics Service

NRES Committee West Midlands - South Birmingham

HRA NRES Centre Manchester
3rd Floor
Barlow House
4 Minshull Street
Manchester
M1 3DZ

Telephone: 0161 625 7815
Facsimile: 0161 625 7299

02 August 2013

Mrs Carly Spicer
School of Psychology
Frankland Building
University of Birmingham
Edgbaston
Birmingham
B15 2TT

Dear Mrs Spicer

Study title: Testing the effect of social support on the relationship between stress and resulting symptoms in families of people with addiction problems.
REC reference: 13/WM/0239
Protocol number: RG_13-049
IRAS project ID: 122319

Thank you for your email of 30 August 2013. I can confirm the REC has received the documents listed below and that these comply with the approval conditions detailed in our letter dated 22 July 2013.

Documents received

The documents received were as follows:

Document	Version	Date
Advertisement	1	20 May 2013
Letter of invitation to participant	1	12 July 2013
Other: Information about Local Support Services	2	12 July 2013
Participant Consent Form	3	26 July 2013
Participant Information Sheet	3	26 July 2013
Protocol	2	06 June 2013
Summary/Synopsis	The SSCS Model	
Summary/Synopsis	The 5 Pathways	

Approved documents

The final list of approved documentation for the study is therefore as follows:

Document	Version	Date
Advertisement	1	20 May 2013
Covering Letter		31 May 2013
Investigator CV	Carly Spicer	
Investigator CV	Alexandre Copello	
Letter from Sponsor	University of Birmingham	08 May 2013
Letter of invitation to participant	1	12 July 2013
Other: Information about Local Support Services	2	12 July 2013
Participant Consent Form	3	26 July 2013
Participant Information Sheet	3	26 July 2013
Protocol	2	06 June 2013
Questionnaire: Alcohol, Drugs and the Family Social Support Scale	Validated	
Questionnaire: Coping Questionnaire (Female Alcohol)	Validated	
Questionnaire: Symptom Rating Test	1.1	18 June 2012
Questionnaire: Family Member Impact Questionnaire	1.1	18 June 2012
REC application	3.5	07 June 2013
Response to Request for Further Information		22 July 2013
Summary/Synopsis	The SSCS Model	
Summary/Synopsis	The 5 Pathways	

You should ensure that the sponsor has a copy of the final documentation for the study. It is the sponsor's responsibility to ensure that the documentation is made available to R&D offices at all participating sites.

13/WM/0239	Please quote this number on all correspondence
------------	--

Yours sincerely



Dr Ashley Totenhofer
Committee Co-ordinator

E-mail: nrescommittee.westmidlands-southbirmingham@nhs.net

Copy to: Dr Sean Jennings – University of Birmingham

Dr Paul McDonald - Research and Innovation BSMHFT

NRES Committee West Midlands - South Birmingham

HRA NRES Centre Manchester
3rd Floor
Barlow House
4 Minshull Street
Manchester
M1 3DZ

Telephone: 0161 625 7815
Facsimile: 0161 625 7299

22 July 2013

Mrs Carly Spicer
School of Psychology
Frankland Building
University of Birmingham
Edgbaston
Birmingham
B15 2TT

Dear Mrs Spicer

Study title:	Testing the effect of social support on the relationship between stress and resulting symptoms in families of people with addiction problems.
REC reference:	13/WM/0239
Protocol number:	RG_13-049
IRAS project ID:	122319

Thank you for your email of 22 July 2013, responding to the Committee's request for further information on the above research and submitting revised documentation.

The further information has been considered on behalf of the Committee by the Chair.

We plan to publish your research summary wording for the above study on the NRES website, together with your contact details, unless you expressly withhold permission to do so. Publication will be no earlier than three months from the date of this favourable opinion letter. Should you wish to provide a substitute contact point, require further information, or wish to withhold permission to publish, please contact the Co-ordinator Dr Ashley Totenhofer, nrescommittee.westmidlands-southbirmingham@nhs.net.

Confirmation of ethical opinion

On behalf of the Committee, I am pleased to confirm a favourable ethical opinion for the above research on the basis described in the application form, protocol and supporting documentation as revised, **subject to the conditions specified below.**

Ethical review of research sites

NHS sites

The favourable opinion applies to all NHS sites taking part in the study, subject to management permission being obtained from the NHS/HSC R&D office prior to the start of the study (see "Conditions of the favourable opinion" below).

Conditions of the favourable opinion

The favourable opinion is subject to the following conditions being met prior to the start of the study.

Additional Conditions Specified by the REC

1. Under the heading 'Who has reviewed the Study?' in the Participant Information Sheet please replace the words 'West Midlands Research Ethics Committee' with 'NRES Committee West Midlands - South Birmingham'.
2. In point 5 of the Consent Form please change 'confidential' to confidentiality'.

You should notify the REC in writing once all conditions have been met (except for site approvals from host organisations) and provide copies of any revised documentation with updated version numbers. The REC will acknowledge receipt and provide a final list of the approved documentation for the study, which can be made available to host organisations to facilitate their permission for the study. Failure to provide the final versions to the REC may cause delay in obtaining permissions.

Management permission or approval must be obtained from each host organisation prior to the start of the study at the site concerned.

Management permission ("R&D approval") should be sought from all NHS organisations involved in the study in accordance with NHS research governance arrangements.

Guidance on applying for NHS permission for research is available in the Integrated Research Application System or at <http://www.rdforum.nhs.uk>.

Where a NHS organisation's role in the study is limited to identifying and referring potential participants to research sites ("participant identification centre"), guidance should be sought from the R&D office on the information it requires to give permission for this activity.

For non-NHS sites, site management permission should be obtained in accordance with the procedures of the relevant host organisation.

Sponsors are not required to notify the Committee of approvals from host organisations

It is the responsibility of the sponsor to ensure that all the conditions are complied with before the start of the study or its initiation at a particular site (as applicable).

Approved documents

The final list of documents reviewed and approved by the Committee is as follows:

Document	Version	Date
Advertisement	1	20 May 2013
Covering Letter		31 May 2013
Investigator CV	Carly Spicer	

Investigator CV	Alexandre Copello	
Letter from Sponsor	University of Birmingham	08 May 2013
Letter of invitation to participant	1	12 July 2013
Other: Information about Local Support Services	2	12 July 2013
Participant Consent Form	2	12 July 2013
Participant Information Sheet	2	12 July 2013
Protocol	2	06 June 2013
Questionnaire: Alcohol, Drugs and the Family Social Support Scale	Validated	
Questionnaire: Coping Questionnaire (Female Alcohol)	Validated	
Questionnaire: Symptom Rating Test	1.1	18 June 2012
Questionnaire: Family Member Impact Questionnaire	1.1	18 June 2012
REC application	3.5	07 June 2013
Response to Request for Further Information		22 July 2013
Summary/Synopsis	The SSCS Model	
Summary/Synopsis	The 5 Pathways	

Statement of compliance

The Committee is constituted in accordance with the Governance Arrangements for Research Ethics Committees and complies fully with the Standard Operating Procedures for Research Ethics Committees in the UK.

After ethical review

Reporting requirements

The attached document "*After ethical review – guidance for researchers*" gives detailed guidance on reporting requirements for studies with a favourable opinion, including:

- Notifying substantial amendments
- Adding new sites and investigators
- Notification of serious breaches of the protocol
- Progress and safety reports
- Notifying the end of the study

The NRES website also provides guidance on these topics, which is updated in the light of changes in reporting requirements or procedures.

Feedback

You are invited to give your view of the service that you have received from the National Research Ethics Service and the application procedure. If you wish to make your views known please use the feedback form available on the website.

Further information is available at National Research Ethics Service website > After Review

We are pleased to welcome researchers and R & D staff at our NRES committee members' training days – see details at <http://www.hra.nhs.uk/hra-training/>

With the Committee's best wishes for the success of this project.

Yours sincerely



Signed on behalf of:
Professor Simon Bowman
Chair

Email: nrescommittee.westmidlands-southbirmingham@nhs.net

Enclosures: "After ethical review – guidance for researchers"

Copy to: Dr Sean Jennings – University of Birmingham

Dr Paul McDonald - Research and Innovation BSMHFT

Appendix 9 Information sheet for participants

Date: 26/07/2013

PARTICIPANT RESEARCH INFORMATION SHEET.

(VERSION THREE)

Researcher: Carly Spicer.

Research Title:

Testing the effect of social support on the relationship between stress and resulting symptoms in families of people with addiction problems.

I would like to invite you to take part in my research study. Before you decide I would like you to understand why the research is being done and what it would involve for you. I will go through the information sheet with you and answer any questions you have. This should take about 15 minutes.

Talk to others about the study if you wish.

Part 1 tells you the purpose of this study and what will happen to you if you take part.

Part 2 gives you more detailed information about the conduct of the study.

Please ask us if there is anything that is not clear.

PART ONE

- **What is the purpose of this research?** - This research has been designed to find out what it is like for people who have relatives or a partner with an addiction problem and who feel they are personally affected by this. The purpose of the questionnaires is to ask you about four areas; coping, the impact of their substance use on you personally, what social support you have, and what symptoms of stress you may or may not experience. The research is being completed as part of a Doctorate in Clinical Psychology at the University of Birmingham and funded by the NHS. It is hoped that the results of this research will help health professionals to provide the right support and services for families affected by addiction.
- **Why have I been invited to take part?** – You have stated that you have a relative or partner with a drug or alcohol problem. We are interested in what this is like for you. If this is not the case please speak with the researcher straight away.

- **Do I have to take part?** - It is up to you to decide to join the study. I will describe the study and go through this information sheet. If you agree to take part, I will then ask you to sign a consent form. You are free to withdraw at any time, without giving a reason. This would not affect the standard of care you receive.
- **What will happen to me if I agree to take part?** – If after having a minimum of 24 hours to make your decision you decide you would like to take part you can contact the researcher or give your permission for them to contact you. The researcher will ask you to sign a form to show that you agree to take part (consent form) and then you will complete 4 questionnaires taking around 30 minutes. This involves reading several questions on each one and ticking the answer that best applies. You can meet with the researcher to do this, answers the questions over the phone, or complete them at home and post them to the researcher in a stamp addressed envelope that we will provide. If you need support to read the questions the researcher will support you. **Will my taking part in the study be kept confidential?** - Yes. We will follow ethical and legal practice and all information about you will be handled in confidence. The details are included in Part 2.
- **Expenses** – please speak with the researchers if you need any help with travel costs. There is no payment available for your time.
- **What are the possible disadvantages and risks of taking part in this study?** – Sometimes talking about your experiences as a relative of someone with an addiction might be upsetting. You will be encouraged to tell the researcher if you feel upset during the questionnaire completion. The researcher has information about which local services are available to you and can provide this if required. At the end you will be asked: ***“has your time completing these questionnaires resulted in any concerns, worries, or difficult thoughts that you feel you may need further support with at this time? If you have answered yes – please tell your researcher as soon as possible”***.
- **What are the possible advantages to taking part in this study?** - I cannot promise the study will help you but the information I get from this study will help improve the support of others like yourselves.

If the information in Part 1 has interested you and you are considering participation, please read the additional information in Part 2 before making any decision.

PART TWO.

- **Will my taking part in this study be kept confidential?** - If you join the study, some parts of your medical records and the data collected for the study may be looked at by authorised persons from the company sponsoring and/or the company organising the research. They may also be looked at by authorised people to check that the study is being carried out correctly. All will have a duty of confidentiality to you as a research participant and we will do our best to meet this duty.

All information which is collected about you during the course of the research will be kept strictly confidential, and any information about you which leaves the hospital/surgery will have your name and address removed so that you cannot be recognised.

Confidentiality is maintained unless something is disclosed that might suggest that someone is at risk; this could be risks to you, risks to others, the general public or if a child or children are at risk. In this instance safeguarding procedures would be followed to ensure that the risks are investigated and any vulnerable parties are supported. Wherever possible you would be informed and involved in this process. However should it be deemed necessary in more serious cases action may be taken without your knowledge. All decisions and action taken will be supervised by Professor Alex Copello and the relevant NHS professionals.

- **What will happen if I do not want to carry on with the study?** – If at any time during or after the questionnaire completion you are not happy to carry on the researcher will stop the questionnaire completion and give you some time out. If you decide not to take part your questionnaires will be destroyed. However, if you finish completing them and decide at a later date that you would like to withdraw your answers you will only be able to do so until the 01/01/14.
- **What will happen to the results of the research study?** –The researcher will use them for their thesis write-up, and they may also be reported in scientific publications. Unless you tell anyone else the only people who will know you have decided to take part in the research will be the chief researcher Carly Spicer and the academic supervisor Professor Alex Copello. A summary of the study and results will be available to all participants and relevant services electronically or by post should they request them. Your researcher will take your details should you request to receive a copy.
- **Who is organising and funding the research?** – The University of Birmingham and the National Health Service.
- **Who has reviewed the study?** - All research in the NHS is looked at by independent group of people, called a Research Ethics Committee, to protect your interests. This study has been reviewed and given favourable opinion by NRES Committee West Midlands – South Birmingham.
- **What happens if I have any further concerns?** – Please feel free to contact the researcher with any concerns you may have. Their contact details are:

You may also like to contact the Patient Liaison and Advice Service (PALS) as a source of independent advice on 0800 953 0045

Thank you for your time.

Appendix 10

CONSENT FORM – Version Three (26/07/2013).

Research site:

Participant Identification Number:.....

Title of Project: Testing the effect of social support on the relationship between stress and resulting symptoms in families of people with addiction problems.

Researcher: Carly Spicer.

PLEASE INITIAL EACH BOX:

1. I confirm that I have understood the information sheet dated 26/07/2013 (version 3) for the above study. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily. ☐
2. I understand that my participation is voluntary and that I am free to withdraw at any time during the questionnaire completion, without giving any reason, without my medical/social care or legal rights being affected. ☐
☐
3. I understand that I cannot withdraw my questionnaires after 01/01/2014. ☐
4. I understand that the result will be reported in the researcher's thesis and may be published in scientific journals or used in presentation to other interested parties. ☐
5. I understand that the information I give is confidential and subject to the NHS confidentiality policy. ☐
6. I understand that there will be NO identifiable data in the final write up, i.e. no one will be able to identify my participation in this study. ☐
☐
7. I agree to take part in the above study. ☐
8. I understand that relevant sections of my medical notes and data collected during the study, may be looked at by individuals from University of Birmingham, from regulatory authorities or from the NHS Trust, where it is relevant to my taking part in this research. I give permission for these individuals to have access to my records. ☐

.....

.....

.....

Name of participant

Date

Signature

CARLY SPICER

.....

.....

Appendix 11 Advert.

Would you like to help out with some research?

Do you have experience of what it is like to have a relative or partner with a drink or drug problem?

The purpose of the research is to ask you about four areas;

How you cope...

The impact of their addiction on you personally...

What support you have at the moment...

What symptoms of stress you may or may not experience...

The research is being completed as part of a Doctorate in Clinical Psychology at the University of Birmingham and funded by the NHS.

It is hoped that the results of this research will help health professionals to provide the right support and services for families affected by addiction.

Please contact Carly Spicer on
information

or ask a member of staff to phone Carly for further

Appendix 12 Example letter.

Version 1 (12/07/2013)

Mrs Carly Spicer
Trainee Clinical Psychologist
School of Psychology
Frankland Building
Edgbaston
University of Birmingham
Birmingham
B15 2TU

Dear Mr/Mrs/Miss/Ms

Re: Taking part in the research project:

Testing the effect of social support on the relationship between stress and resulting symptoms in families of people with addiction problems.

Thank you for agreeing to consider taking part in the above research being completed by myself at the University of Birmingham. Your support is gratefully received in finding out more about how we can help and support families living with relatives with an addiction.

(NEXT SECTION TO BE DELETED ACCORDINGLY DEPENDING ON METHOD OF DATA COLLECTION):

As discussed previously I have enclosed the following documents for you to read and/or complete at home and return to me:

- Patient Information Sheet (for information only)
- Consent Form (for completion).
- Questionnaires for completion:
 - Family Member Impact Scale.
 - Coping Questionnaire.
 - Symptoms Rating Test.
 - Alcohol, Drugs and the Family Social Support Scale.

Please use the enclosed stamped addressed envelope to return them to me no later than .../.../.... Once I have received your consent form I will contact you on the agreed phone number to arrange a time to complete your questionnaires over the phone.

Please don't hesitate to ring me if you have any questions or queries.

Many thanks for your help.

Kind regards,

Carly Spicer, MBPsS, BSc, MSc,

Trainee Clinical Psychologist.

Appendix 13 SPSS Output

Run MATRIX procedure:

***** PROCESS Procedure for SPSS Release 2.11 *****

Written by Andrew F. Hayes, Ph.D. www.afhayes.com

Documentation available in Hayes (2013). www.guilford.com/p/hayes3

Model = 4

Y = ZStrain

X = ZStress

M1 = ZCoping

M2 = ZPFS

M3 = ZNAFD

M4 = ZPADF

Sample size

67

Outcome: ZCoping

Model Summary

R	R-sq	F	df1	df2	p
.4945	.2445	21.0364	1.0000	65.0000	.0000

Model

	coeff	se	t	p	LLCI	ULCI
constant	-.0108	.1053	-.1023	.9188	-.2211	.1995

a1

ZStress	.4855	.1059	4.5865	.0000	.2741	.6969
---------	-------	-------	--------	-------	-------	-------

Outcome: ZPFS

Model Summary

	R	R-sq	F	df1	df2	p
	.0660	.0044	.2845	1.0000	65.0000	.5956

Model

	coeff	se	t	p	LLCI	ULCI
constant	-.0018	.1229	-.0146	.9884	-.2472	.2436

a2

ZStress	-.0659	.1235	-.5334	.5956	-.3126	.1808
---------	--------	-------	--------	-------	--------	-------

Outcome: ZNAFD

Model Summary

	R	R-sq	F	df1	df2	p
	.5558	.3089	29.0594	1.0000	65.0000	.0000

Model

	coeff	se	t	p	LLCI	ULCI
constant	-.0151	.1024	-.1474	.8833	-.2195	.1894

a3

ZStress	-.5548	.1029	-5.3907	.0000	-.7603	-.3492
---------	--------	-------	---------	-------	--------	--------

Outcome: ZPADF

Model Summary

	R	R-sq	F	df1	df2	p
	.3352	.1124	8.2296	1.0000	65.0000	.0056

Model

	coeff	se	t	p	LLCI	ULCI
constant	.0091	.1160	.0784	.9377	-.2226	.2408

a4

ZStress	.3346	.1166	2.8687	.0056	.1017	.5675
---------	-------	-------	--------	-------	-------	-------

Outcome: ZStrain

Model Summary

R	R-sq	F	df1	df2	p
.6696	.4483	9.9146	5.0000	61.0000	.0000

Model

	coeff	se	t	p	LLCI	ULCI
constant	.0034	.0955	.0355	.9718	-.1877	.1944
b1						
ZCoping	.1823	.1202	1.5162	.1346	-.0581	.4227
B2						
ZPFS	.0089	.1035	.0859	.9319	-.1981	.2159
B3						
ZNAFD	-.3960	.1261	-3.1402	.0026	-.6482	-.1438
B4						
ZPADF	.0372	.1117	.3328	.7404	-.1862	.2606
C'						
ZStress	.2179	.1228	1.7743	.0810	-.0277	.4635

***** TOTAL EFFECT MODEL *****

Outcome: ZStrain

Model Summary

R	R-sq	F	df1	df2	p
.5328	.2839	25.7677	1.0000	65.0000	.0000

Model

	coeff	se	t	p	LLCI	ULCI
constant	.0077	.1054	.0733	.9418	-.2028	.2183
ZStress	.5379	.1060	5.0762	.0000	.3263	.7496

***** TOTAL, DIRECT, AND INDIRECT EFFECTS *****

Total effect of X on Y

Effect	SE	t	p	LLCI	ULCI
--------	----	---	---	------	------

c

.5379 .1060 5.0762 .0000 .3263 .7496

Direct effect of X on Y

Effect	SE	t	p	LLCI	ULCI
--------	----	---	---	------	------

C'

.2179	.1228	1.7743	.0810	-.0277	.4635
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Indirect effect of X on Y

Effect	Boot SE	BootLLCI	BootULCI
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The effect of all mediated pathways

TOTAL	.3200	.1003	.1225	.5336
-------	-------	-------	-------	-------

 (the LLCI to ULCI should not include 0)

(a1*b1)

ZCoping	.0885	.0866	-.0529	.2877
---------	-------	-------	--------	-------

(a2*b2

ZPFS	-.0006	.0194	-.0763	.0270
------	--------	-------	--------	-------

(a3*b3)

ZNAFD	.2197	.0882	.0650	.4168
-------	-------	-------	-------	-------

(a4*b4)

ZPADF	.0124	.0438	-.0638	.1108
-------	-------	-------	--------	-------

***** ANALYSIS NOTES AND WARNINGS *****

Number of bootstrap samples for bias corrected bootstrap confidence intervals:

1000

Level of confidence for all confidence intervals in output:

95.00

NOTE: Some cases were deleted due to missing data. The number of such cases was:

2

----- END MATRIX -----

Appendix 14 Questionnaire Pack.

